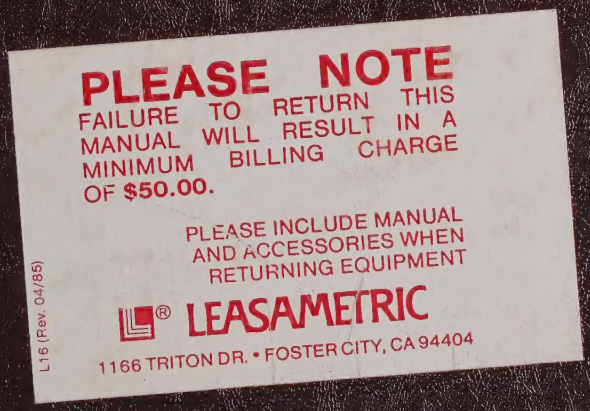
DELTA DESIGN INC

2850

INSTRUCTION MANUAL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DELTA DESIGN, INC.
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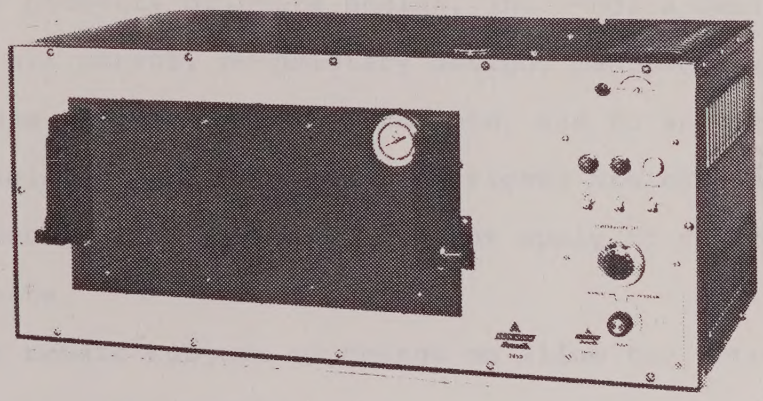
INSTRUCTION MANUAL
Model 2850



DELTA DESIGN
INC.

ENVIRONMENTAL TEST CHAMBER

ENVIRONMENTAL CONTROL EQUIPMENT FOR RESEARCH AND INDUSTRY
5775 KEARNY VILLA ROAD • SAN DIEGO, CALIFORNIA 92123

2850-0974

Printed in U.S.A.

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San Diego, CA 92123

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SPECIFICATIONS

TEST AREA DIMENSION (H x W x D)	7" x 16" x 7" (17.78 x 40.64 x 17.78 Cm)
AIR CIRCULATION	140 CFM centrifugal blower with baffling provides equal distribution througout the chamber in a horizontal air flow pattern.
INNER LINER	Type 302 Stainless Steel
OUTER CASE	Aluminum
INSULATION	Fiberglas
WEIGHT	52 lbs (23.6 Kg)
POWER REQUIREMENT	120 VAC, 50 or 60 Hz, Single Phase, 20 Amp or 240 VAC, 50 or 60 Hz, Single Phase, 15 Amp.
CONTROLS	POWER On-Off Switch and Light COOL On-Off Switch and Light HEAT On-Off Switch and Light TEMPERATURE SET Control MANUAL/PROGRAM Control Switch (MODE)
HEATING ELEMENTS	Two 20 ohm Elements to give a total of 1875 Watts, Nichrome Wire.
COOLING	Liquid Carbon Dioxide (LCO_2) or Liquid Nitrogen (LN_2)
PROGRAMMING	Programmable
COOL DOWN TIME	Ambient to -53°C in 3½ minutes.
HEAT UP TIME	Ambient to +217°C in 9-3/4 minutes.

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TEMPERATURE RANGE	-73°C to +315°C
RESETTABILITY	0.25°C
TEMPERATURE DEVIATION	0.1°C
LINE VOLTAGE STABILIZATION	0.25°C for 105 to 125 VAC, Line Voltage Change 0.25°C for 220 to 240 VAC, Line Voltage Change
AMBIENT TEMPERATURE COMPENSATION	±0.010°C/°C
HEAT LOAD COMPENSATION	±0.040°C Watt
THERMAL IMPEDANCE OF CHAMBER	Approximately 1°C/Watt
NULL DETECTOR CONTACT CLOSURE	Temperature will be within ±2°C of final temperature at 3 minutes after closure occurs.
NULL DETECTOR CONTACT RATING	1 amp, 240V, with contact protection provided by user to protect against inductive loads.

NOTE: IT IS RECOMMENDED THAT THIS MANUAL BE READ THOROUGHLY BEFORE CONNECTING EQUIPMENT TO ELECTRICAL POWER SOURCE.

INTRODUCTION

The Model 2850 Environmental Test Chamber offers an internal working volume 7" high, 16" wide and 7" deep. Air flow is horizontal at 140 CFM with baffling to provide equal air distribution.

Temperature control of $\pm 0.1^{\circ}C$ provides the precision necessary for bread-board circuit testing.

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1 CHAMBER & CONTROLLER DESCRIPTION

1.1 Chamber

1.1.1 The Model 2850 is a precision environmental temperature test chamber having a stainless steel interior, aluminum outer case and fiberglas insulation. The air circulation is closed and provided by a 140 CFM blower. The chamber is heated by applying full wave power to bobbin wound nichrome heating elements via the heat switch.

1.1.2 The chamber is cooled by injecting liquid CO_2 (liquid nitrogen in the LN_2 models) into the air stream through an expansion nozzle. The coolant flow is metered by a solenoid valve, controlled by a solid state switch.

The temperature control system is shown in block diagram form in Figure 5.

1.2. Solid State Controller

1.2 1 The controller compares the resistance of the temperature probe to the resistance of the TEMPERATURE SET potentiometer. (The resistance of a remote programming resistor is compared to the probe resistance if the MODE switch is in the program position).

1.2.2 The resistance of the probe will always be either less than, equal to or greater than the resistance of the TEMPERATURE SET potentiometer (program resistance). These three situations directly correspond to the chamber temperature being lower than, equal to, or higher than desired. The controller applies heat, coolant, or withholds both to obtain and maintain the selected temperature in the chamber.

1.2.3 Mode - The controller is a three mode unit, i.e.,

a) Heat only
b) No heat or coolant
c) Coolant only

This mode of control insures that LCO_2 or LN_2 is not wasted in a continuous cycling of the heaters and coolant valve such as would be the case for a simple two state output controller.

1.2.4 Further information on the controller may be found in the complete Type III Controller Manual included as part of this information package.

1.3 Null Detector Circuit

1.3.1 A contact closure is provided at the rear which functions when the chamber reaches the indicated set point of the controller. This contact closure may be used to signal external equipment that the chamber has reached selected temperature.

1.3.2 The Delta Design Model 9308 HI-LO Programmer, Model 9311 TEN STEP Programmer, and the Model 9313 HI-LO-AMBIENT Programmer utilize the null contacts to start their timers when they are used with the chamber. This contact closure feature is most useful in automatic test programming applications.

2 INITIAL SETUP

2.1 Electrical Connection - Power connection should be an AC power source rated at 125V - 20 amps - 50/60 Hz or 240V - 15 amps - 50/60 Hz (240V option). THE CHAMBER MUST BE CONNECTED TO EARTH GROUND (GREEN WIRE).

2.2 Liquid Coolant - Liquid Carbon Dioxide (LCO_2) - 1050 psi system (standard). Optional systems are LCO_2 - 300 psi, and Liquid Nitrogen (LN_2) - 100 psi.

2.2.1 Liquid Carbon Dioxide - 1050 psi system. A siphon type liquid CO_2 bottle is recommended.

2.2.1.1 Test the bottle by releasing a small amount of LCO_2 into a white handkerchief. Any brown stain indicates rust which would clog the filter and valve in the chamber. A wet handkerchief indicates water which would either freeze in the valve or clog the injector nozzle. Crack the LCO_2 valve open on the cylinder and notice the spray. It should be a dense, white cloud. It looks thin and gray when the tank is almost empty. An almost empty tank will not give proper cooling and should not be used. Connect the tank of LCO_2 to the rear of the chamber with the supplied high-pressure hose and fittings. Place a small amount of sealing compound on the threads of the male fitting to prevent leakage. DO NOT LET ANY SEALING COMPOUND GET INTO THE VALVE INLET ON THE REAR OF THE CHAMBER. Open the bottle and check for leaks which show as frosty spots on the hose or fittings.

2.2.2 Liquid Carbon Dioxide - 300 psi Low Pressure system.

2.2.2.1 When the in-plant use of liquid CO_2 exceeds approximately 1000 to 2000 pounds per month, a bulk liquid storage system can be installed to reduce the cost of coolant.

Chambers being operated with this type of system have to be fitted with a different CO_2 valve and injector than used on a 1050 psi system. Contact Delta for information concerning valve replacement. If new chambers are ordered for use with a bulk storage 300 psi system, the fact should be stated on the order.

> NOTE: The bulk storage system should be of the recirculating type if possible. If not, the supply should be located as close as possible to the chamber to minimize gas formation in the supply line. This is particularly important in low volume usage systems as the insulation and fluid flow are the factors that prevent boiling of CO_2 in the supply line. Gaseous CO_2 is not an effective coolant.

2.2.2.2 All lines, valves and connecting hoses should be blown out before the chamber is connected. Water is very troublesome and is apparently inherent in some low-pressure refrigerated supplies. If lines are opened to bleed off excessive pressure at shutdown, close them to prevent contamination by condensed moisture. This will help to keep ice from forming in the control valve.

2.3 Liquid Nitrogen

CAUTION

> Oxygen in the air surrounding the chamber inner liner and in the insulation can be liquified at low temperatures. This creates an oxygen rich atmosphere surrounding the heater area. The chamber tends to be self purging as the nitrogen replaces the usual atmosphere near the heaters. Any mixture of oil and liquid oxygen can be explosive so that extreme care must be used during operation at very low temperatures.

2.3.1 A 100 psi valve and stainless steel injector assembly is used for the liquid nitrogen applications. LCO_2 from a tank will not operate properly in a chamber equipped for LN_2.

2.3.2 Connect a liquid nitrogen liquid withdrawal container to the LN_2 input of the chamber with an insulated transfer line. A relief valve should be installed in the line with a relief pressure between 60 and 100 psi for a 2700 cubic foot 50 psi liquid withdrawal container.

3 STARTING UP PROCEDURE

3.1 Precautions

3.1.1 Connect SAFETY PLUG (rear of chamber) when external programmer is not being used. This will preclude any accidental high temperature being obtained if the MODE switch is placed in the PROGRAM position with no programmer connected.

3.1.2 Unplug the chamber from all sources of power before attempting any type of servicing or removal of the controller chassis. The case of the triac switch assembly, located on the controller sub-assembly, is at power line potential and extreme care in servicing or calibration must be exercised.

3.1.3 Insure that the correct type of LCO_2 (liquid carbon dioxide) source is connected to the chamber before operating at low temperature. Recommend standard 50 pound capacity high dry siphon LCO_2 supply. Test the LCO_2 for cleanliness by discharging a quantity of it through a clean white handkerchief. Bits of rust and traces of oil, ice or water indicate contaminated LCO_2 which should not be used.

3.1.4 Ground the case of the chamber to earth ground. When a grounded outlet is not available, use the three-to-two adapter (supplied with the chamber) and connect the green colored "pigtail" to earth ground. The chamber must not be operated without the case grounded.

3.1.5 Operate the chamber at a temperature of 200°C for an hour after prolonged operation at low temperatures. This restores the efficienty of the insulating material by driving out the moisture which has been condensed out of the air.

CAUTION

Liquid oxygen may be formed in the insulation when the chamber is operated at low temperatures. Any mixture of oil and liquid oxygen can be explosive. If oil contamination is suspected, bake the chamber out by operating it at a temperature of 200°C for a period of 3 hours before taking it to extremely low temperatures.

3.1.6 Do not leave liquid nitrogen trapped in a line (valves closed at both ends) as high pressures will be developed as the liquid absorbs heat and becomes gas.

3.2 Controls - See Figure 2.

3.3 Adjusting the Failsafe

3.3.1 To adjust the FAILSAFE high temperature protection unit, rotate the slotted FAILSAFE control. The trip temperature is increased by rotating the control counterclockwise and is lowered by turning the control clockwise. The FAILSAFE setting is preset at the factory at +315°C (maximum rating of standard chamber). If it is desirable to change the setting to a lower temperature setting, operate the chamber at the maximum temperature desired. Adjust the FAILSAFE until it is on the verge of tripping.

CAUTION

Do not rotate the FAILSAFE setting more than one full turn lower than the trip point, as this can damage the unit.

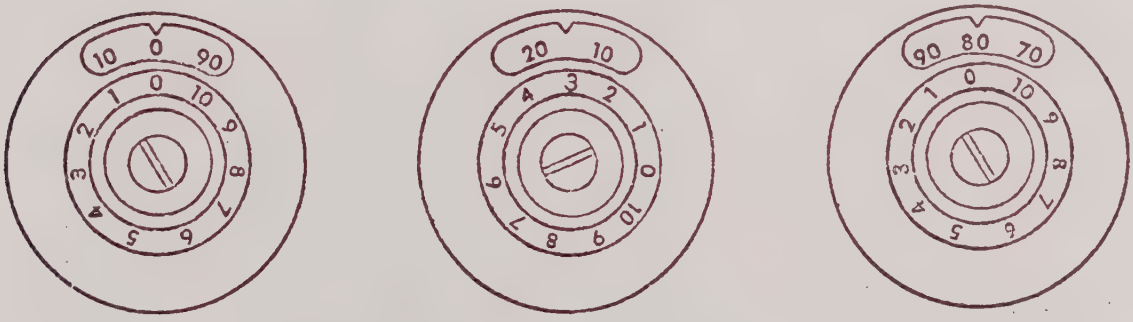
3.4 Setting the Dial Temperature Indicator

3.4.1 Refer to example A - Set both dials at zero.

3.4.2 One complete rotation of the knob equals 100°. Clockwise is plus (+) degrees (F. or C) and counter-clockwise is minus (-) degrees. Each rotation of the knob is indicated by the small dial nearest the knob.

3.4.3 The large dial indicates each degree, every tenth numbered. Thus, as in example B, the large dial is set at 15, and the small dial is beyond 3, therefore the setting is +315°.

3.4.4 When setting to a minus (-) temperature it is necessary to subtract the degrees from 100, i.e., 20 from 100 equals "80" reading on the large dial to have a setting of -20°. This is shown in example C. It will be noted that the zero on the small dial is just to the left of the marker. Also, on the models having a range greater than -100°, it is necessary to keep track of the counter-clockwise rotation of the knob.



A
(0°)

B
(+315°)

C
(-20°)

FIGURE 2
TEMPERATURE SET DIAL

4 PROGRAMMING

4.1 Connect the correct resistances between pins 1 and 3 of the PROGRAM jack. Set the MODE switch to PROGRAM and the HEAT AND COOL switches to their ON positions. The controller will apply heat or coolant as needed to obtain the programmed temperature.

4.2 A safety plug is provided with the chamber and should be kept connected to the PROGRAM input whenever an actual programmer or actual resistance is not connected. The safety plug will prevent the chamber from accidentally being programmed to a very high temperature if the MODE switch is placed in the PROGRAM position with an open PROGRAM input.

4.3 The safety plug disables the heat and cool circuits of the controller when the MODE switch is placed in the PROGRAM position.

5 WARRANTY

Delta Design, Inc. guarantees all products manufactured and sold by it to conform to published specifications and against defective material and workmanship for a period of 90 days from the date of our shipment. Temperature chambers and electronics are warranted for one year from date of shipment. All contactor assemblies are warranted for a period of 90 days or 1/2 million cycles. Obligation under these warranties is limited to repair or replacement by Delta at its plant or one of its authorized service stations, on any of our products which Delta determines to be defective or not in accord with stated specifications. Delta will not accept responsibility for any defect caused by improper use, nor will Delta assume liability for any unauthorized repairs or modifications to its products or materials, even though defective or not in accord with the specifications. In no case will responsibility extend to products, materials, or equipment not manufactured by Delta. All products to be returned to Delta's plant for warranty repair must have prior written approval from Delta Design, Inc., and all return transportation charges will be at the buyer's expense. Delta will not accept liability for any unauthorized returns. No liability will be accepted for any damages to customer's materials, and equipment due to the use or misuse of Delta's products, nor for any loss of profits or other special damages. Delta Design, Inc., reserves the right to change price, design features and/or specifications without notice.

TROUBLE SHOOTING: ELECTRICAL

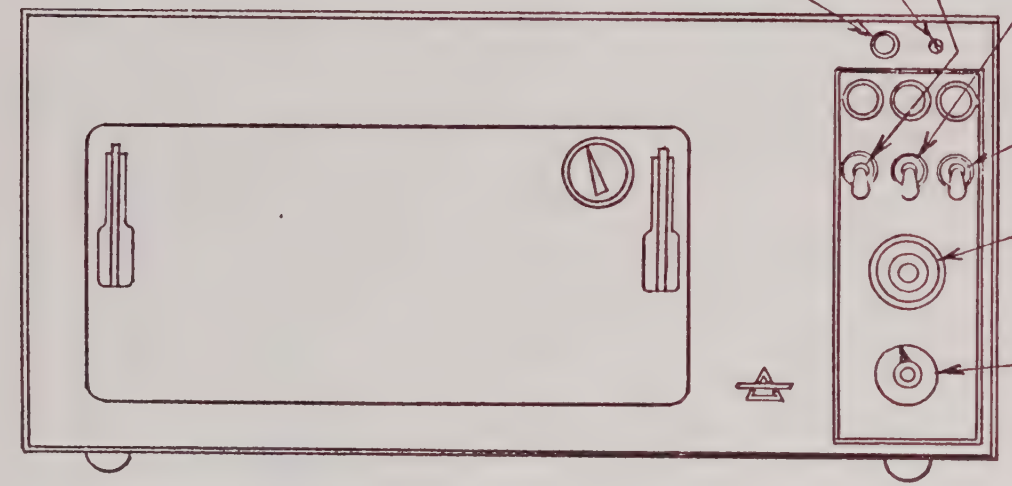
HOW TO USE THIS CHART

1. Turn Mode Switch to Manual.
2. Note Thermometer Reading (Chamber Temperature)
3. Turn Heat and Cool Switches On.
4. Turn Temperature Set Control 50° Higher than Chamber Temperature and note the conditions of the Heat and Cool Lamps.
5. Turn Temperature Set Control 50° Lower than Chamber Temperature and note the conditions of the Heat and Cool Lamps.

These two situations determine the correct block to read in the chart:

6. Enter the Chart at the Top for the conditions observed in step 4. (50° Higher than Chamber Temperature.)
7. Enter the Chart at the Left Side for the conditions observed in step 5. (50° Lower than Chamber Temperature.)

		LIGHT STATE WITH TEMPERATURE SET DIAL 50° HIGHER THAN CHAMBER TEMP.			
LIGHT STATE WITH TEMPERATURE SET DIAL 50° LOWER THAN CHAMBER TEMP.		RED - OFF GREEN - OFF	RED - ON GREEN - OFF	RED - OFF GREEN - ON	RED - ON GREEN - ON
	RED - OFF GREEN - OFF	Probe Element shorted to case. (Replace) Failure on Amplifier P.C. Board. (Trace signal with scope) Transformer Winding open.	Cool Circuit has failed. Trace signals with scope.		
	RED - ON GREEN - OFF		Probe shorted out. Temp. set Pot. — open. Cool Anticipator winding open. Check between Terminal A and Case of Q8 for 10Ω.		
	RED - OFF GREEN - ON	Failsafe Relay K1 not energizing. Coil resistance will be Approx. 10K. Failsafe open. Heat Triac failed.	NORMAL	Probe Open. Temp. Set. Pot. shorted. Heat Anticipator Winding open: Check between B and Case of Q9 for 10Ω.	Cool Circuit has failed — Trace signal with scope.
	RED - ON GREEN - ON		Heat circuit has failed — Trace signal with scope. Triac failed.		



FAILSAFE ADJUST- LOCATED ON FRONT OF CHAMBER
TURN TO CHANGE TEMPERATURE AT WHICH FAILSAFE WILL TRIP
CAUTION: DO NOT LOWER FAILSAFE TEMP. SETTING UNLESS HEAT SW. IS ON & FAILSAFE IS OFF.

FAILSAFE LAMP- GLOWS RED WHEN FAILSAFE IS TRIPPED

(5) HEAT SWITCH & LIGHT-- SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY HEAT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER RED LIGHT IS ON STEADY WHEN CHAMBER IS HEATING, BLINKS WHEN CHAMBER REACHES SELECTED TEMPERATURE ABOVE AMBIENT

(4) COOL SWITCH & LIGHT--SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY COOLANT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER GREEN LIGHT IS ON STEADY WHEN CHAMBER IS COOLING.

(3) POWER SWITCH & LIGHT--SWITCH ON MAIN POWER ON. WHITE LIGHT GLOWS WHEN POWER IS ON.

(2) TEMPERATURE SET DIAL--SET TO DESIRED TEMPERATURE. SELECTS CHAMBER TEMPERATURE IF MODE SWITCH IS IN MANUAL POSITION.

(1) MODE SWITCH-- SET TO MANUAL POSITION. ASSIGNS THE SELECTION OF CHAMBER TEMPERATURE TO TEMPERATURE SET DIAL OR EXTERNAL PROGRAMMER.

MANUAL POSITION: TEMPERATURE SET DIAL DETERMINES CHAMBER TEMPERATURE.

PROGRAM POSITION: PROGRAMMING RESISTANCE CONNECTED TO PROGRAM JACK AT REAR OF UNIT SELECTS CHAMBER TEMPERATURE

CAUTION: ALWAYS CONNECT SAFETY PLUG (AT REAR OF CHAMBER) WHEN AN EXTERNAL PROGRAMMER IS NOT BEING USED

THERMOMETER- INDICATES CHAMBER TEMP. IN TEST VOLUME.

OPERATING INSTRUCTIONS:

A. INSTALL THE CHAMBER, CONNECT POWER CORD TO SUITABLE OUTLET & COOLANT SUPPLY TO VALVE INLET.

B. FOLLOW STEPS 1 THRU 5.

OPERATING INSTRUCTIONS
FIGURE 2

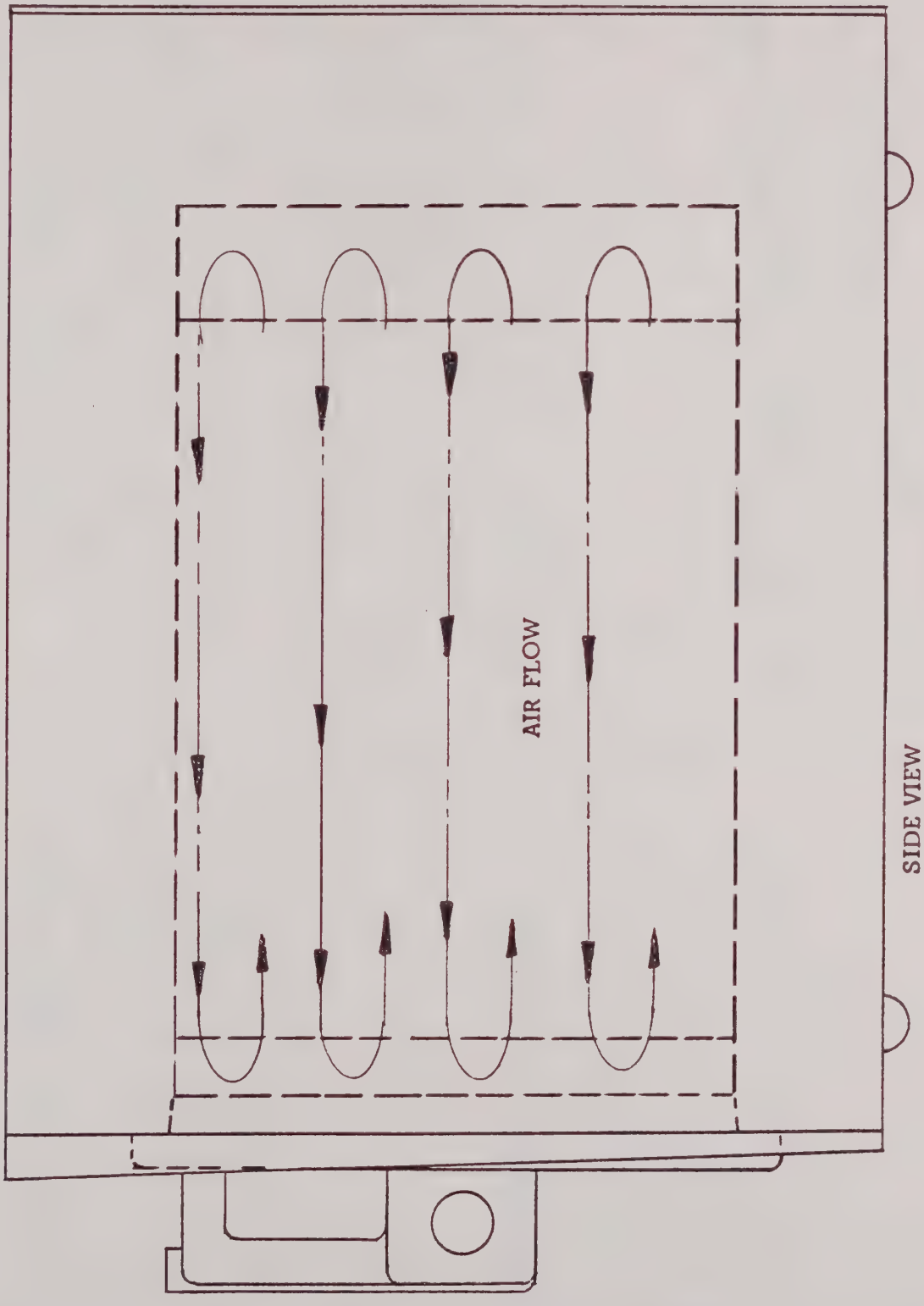


FIGURE 3

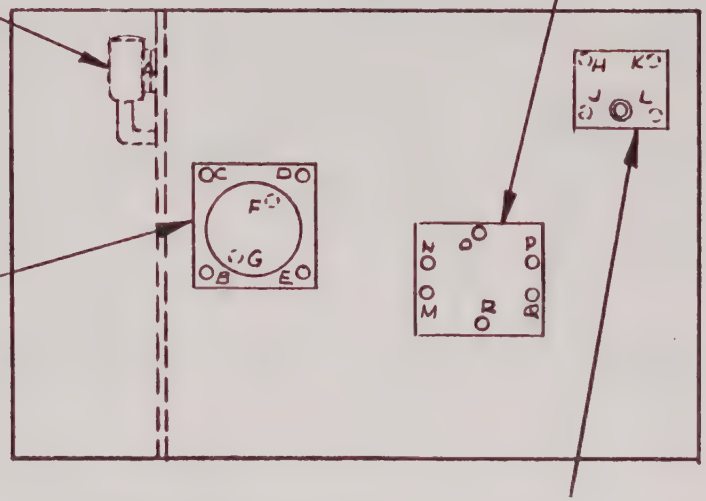
CHAMBER AIR FLOW PATTERN

TO REMOVE CO_2 VALVE

1. UNPLUG CHAMBER POWER CORD
2. REMOVE SIDE PANEL
3. REMOVE WIRES FROM TB2
4. REMOVE MOUNTING SCREWS (A) SEE CO_2 VALVE REMOVAL CHART
5. PULL CO_2 VALVE STRAIGHT OUT
6. AVOID BENDING OR DAMAGE TO INJECTOR STEM.

TO REMOVE HEATERS

1. UNPLUG CHAMBER POWER CORD
2. REMOVE SCREWS FROM REAR COVER
3. UNPACK FIBERGLASS
4. DISCONNECT HEATER WIRES
5. REMOVE (6) SCREWS, M, N, O, P, Q, R
6. PULL OUT HEATER ASSY.



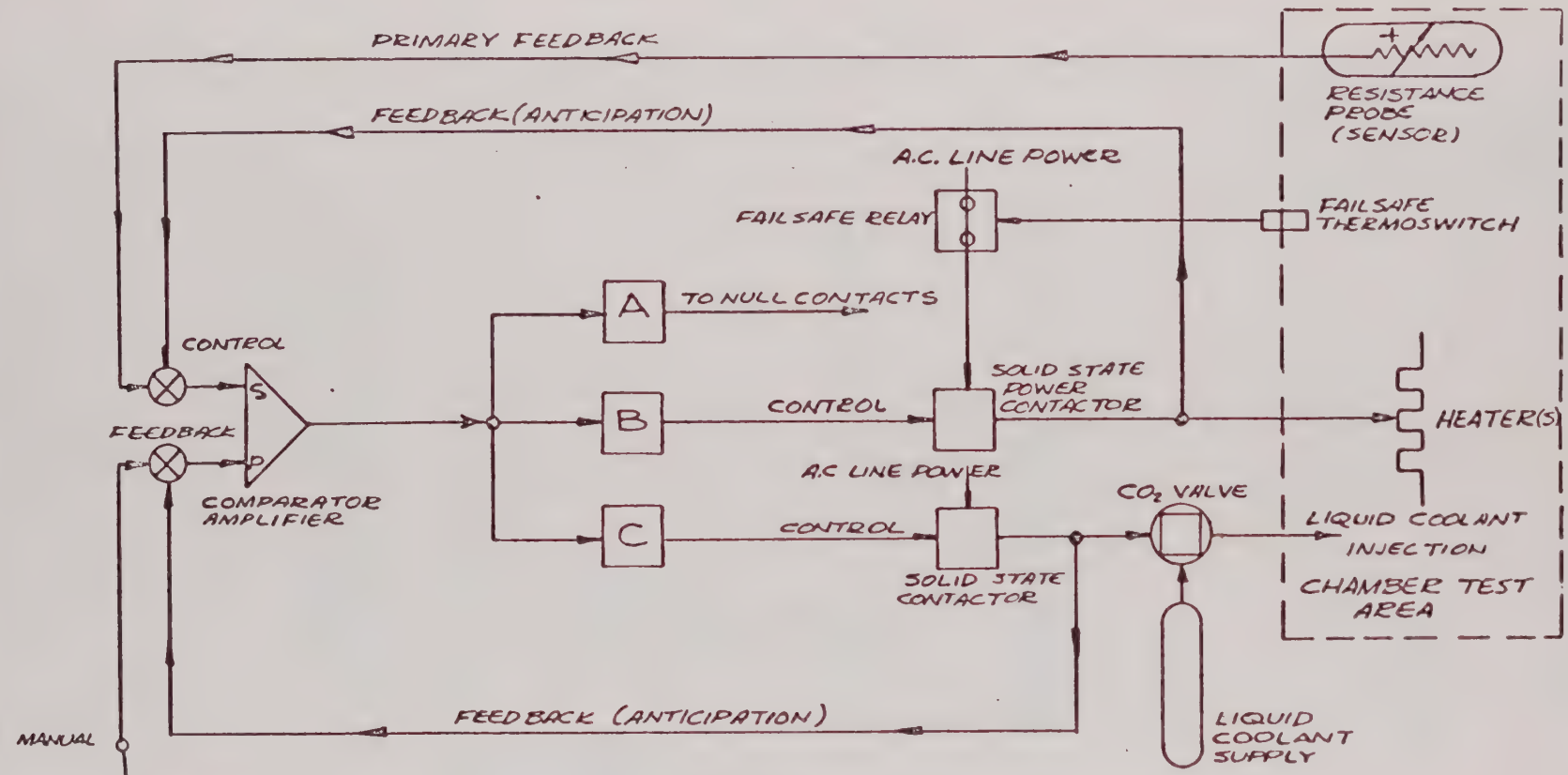
TO REMOVE BLOWERS

1. UNPLUG CHAMBER POWER CORD.
2. REMOVE 4 SCREWS B, C, D, E & REMOVE GRILL
3. REMOVE (2) WIRE NUTS
4. REMOVE (2) #10 SCREWS AT F & G.
5. PULL MOTOR STRAIGHT OUT

TO REMOVE LN_2 VALVE WHEN USED

1. UNPLUG CHAMBER POWER CORD
2. REMOVE (4) SCREWS AT H, J, K, L
3. PULL LN_2 PACKAGE DIRECTLY TO REAR TO CLEAR LN_2 INJECTOR TUBE.
4. REMOVE WIRE NUTS.

FIGURE 4
CO_2 - LN_2 VALVE REMOVAL

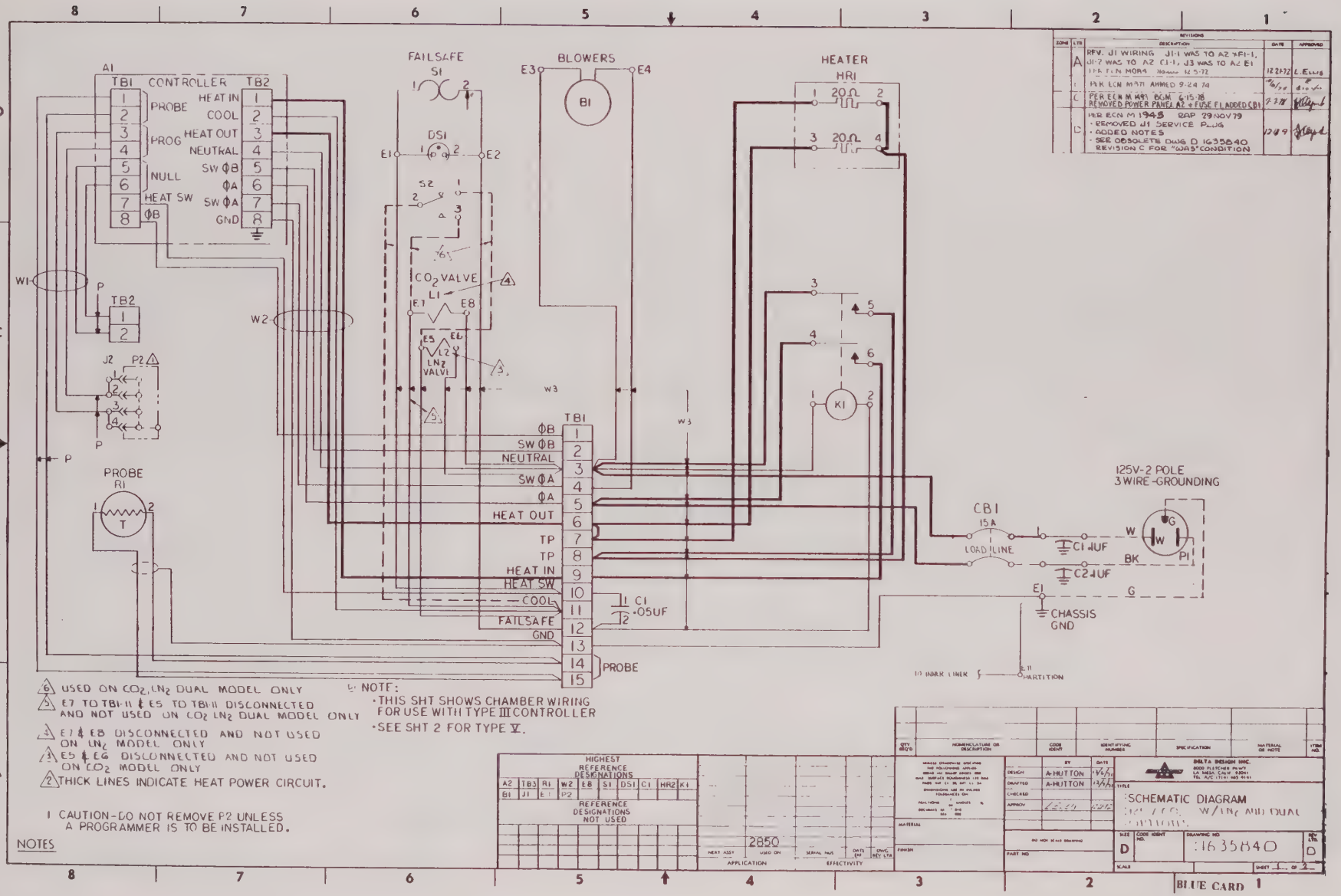


TEMPERATURE CONTROL SYSTEM
SOLID STATE, TYPE III
DELTA DESIGN INC.

A = NULL DETECTOR SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ = /S/

B = HEAT. SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ INPUT AT AMPLIFIER
GREATER THAN /S/

C = COOL. SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /S/ GREATER THAN /P/



6 USED ON CO_2, LN_2 DUAL MODEL ONLY

5 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED AND NOT USED ON CO_2 LN_2 DUAL MODEL ONLY

4 E7 & E8 DISCONNECTED AND NOT USED ON LN_2 MODEL ONLY

3 E5 & E6 DISCONNECTED AND NOT USED ON CO_2 MODEL ONLY

2 THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION-DO NOT REMOVE P2 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES

NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE III CONTROLLER
- SEE SHT 2 FOR TYPE V.

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	RFV. J1 WIRING J1-1 WAS TO A2 Y1-1, J1-2 WAS TO A2 C1-1, J3 WAS TO A2 E1 PER ECN M089	12 2 72	L. Ellis
	B	PER ECN M431 AMMED 9-24-74	9/30/74	[illegible]
	C	PER ECN M 493 BGM 6-15-78 REMOVED POWER PANEL A2 & FUSE F1, ADDED CB1	7 78	[illegible]
	D	PER ECN M 1943 RAP 29 NOV 79 • REMOVED J1 SERVICE PLUG • ADDED NOTES • SEE OBSOLETE DWG D 1635840 REVISION C FOR "WAS" CONDITION	1279	[illegible]

HIGHEST REFERENCE DESIGNATIONS: A2 TB3 R1 W2 E8 S1 DS1 C1 HR2 K1 E1 J1 E7 P2

REFERENCE DESIGNATIONS NOT USED

HEAT ASSY 2850 USED ON APPLICATION

SERIAL NUS EFFECTIVITY

DATE EFF DWG REV LTR

	BY	DATE
DESIGN	A-HUTTON	12/2/72
DRAFTED	A-HUTTON	12/2/72
CHECKED		
APPROV		

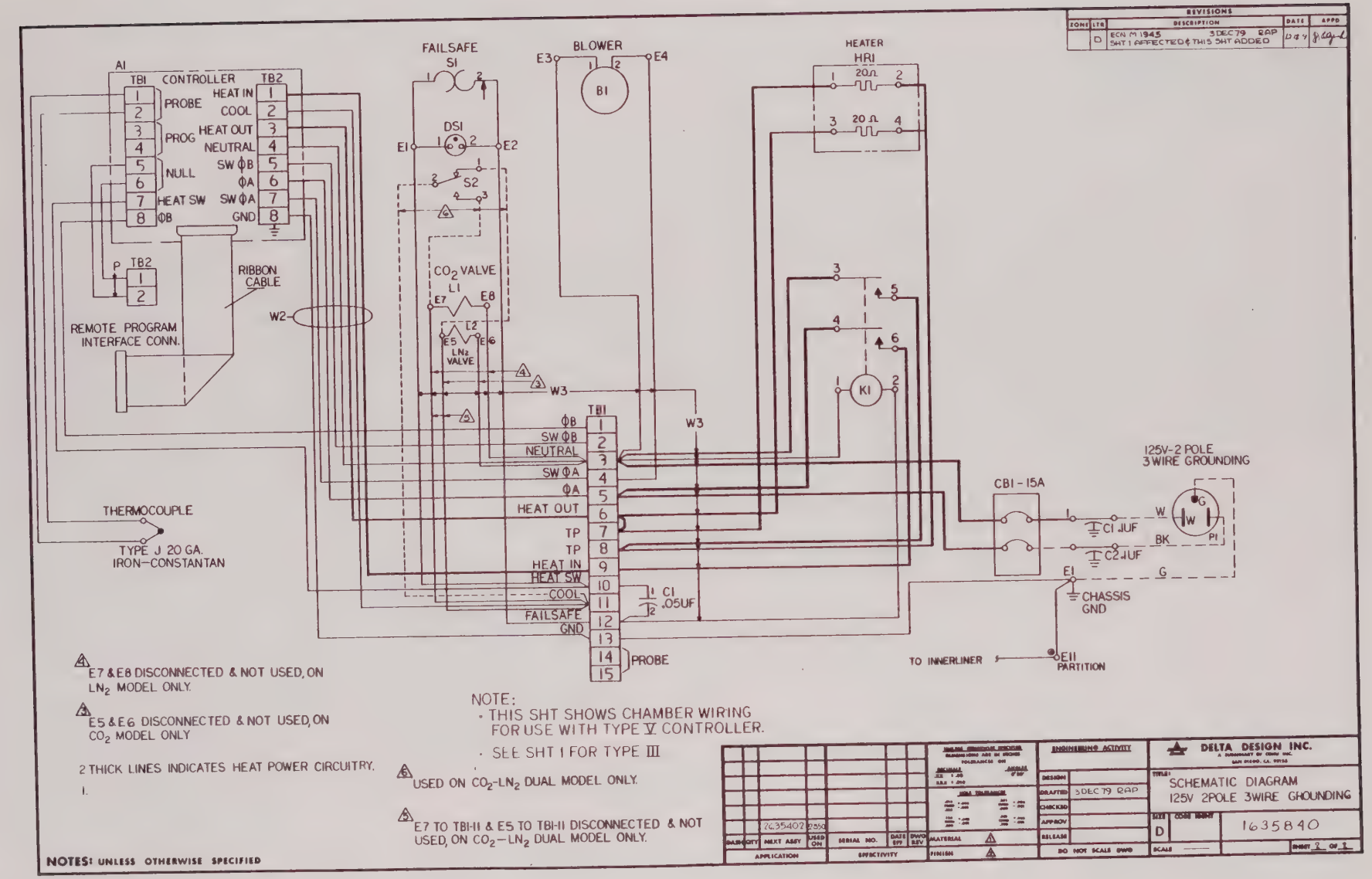
DELTA DESIGN INC. 8000 FLETCHER PKWY LA MESA, CALIF. 92041 TEL A/C (714) 463-9141

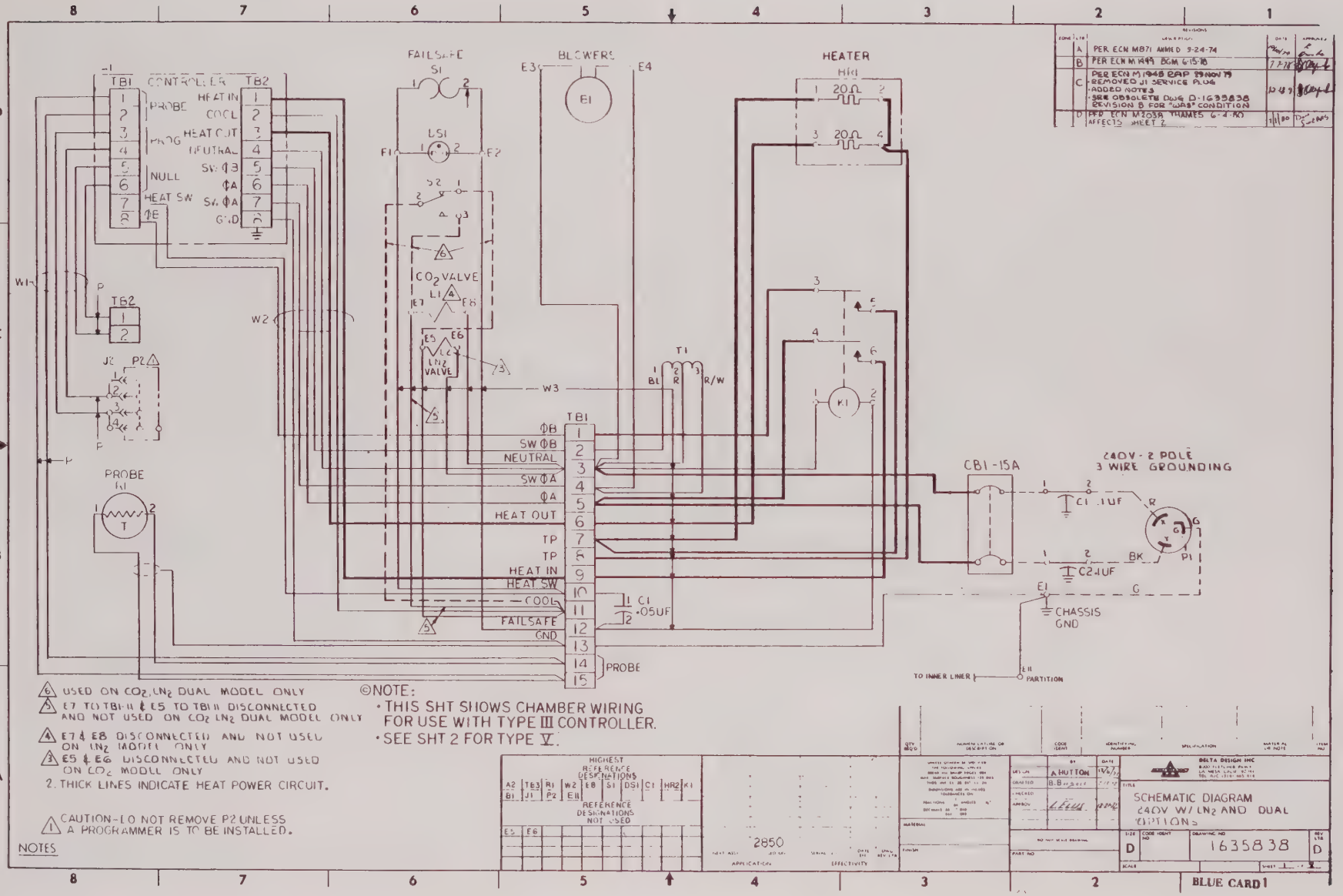
TITLE: SCHEMATIC DIAGRAM [illegible] W/LN2 AND DUAL [illegible]

SIZE D | CODE IDENT NO. | DRAWING NO 1635840 | REV LTR D

SCALE | SHEET 1 OF 2

BLUE CARD 1


REVISIONS
ZONE LTR DESCRIPTION DATE APPD
D ECN M 1945 SHT 1 AFFECTED & THIS SHT ADDED 3DEC79 RAP
A1
TB1 CONTROLLER TB2
PROBE
PROG
NULL
HEAT SW
HEAT IN
COOL
HEAT OUT
NEUTRAL
SW ΦB
ΦA
SW ΦA
GND
ΦB
P TB2
RIBBON CABLE
REMOTE PROGRAM INTERFACE CONN.
W2
THERMOCOUPLE
TYPE J 20 GA. IRON-CONSTANTAN
FAILSAFE
S1
DS1
E1
E2
S2
CO2 VALVE
L1
E7
E8
L2
E5
E6
LN2 VALVE
W3
BLOWER
E3
E4
B1
HEATER
HR1
20Ω
K1
TB1
ΦB
SW ΦB
NEUTRAL
SW ΦA
ΦA
HEAT OUT
TP
TP
HEAT IN
HEAT SW
COOL
FAILSAFE
GND
C1 .05UF
PROBE
CB1 - 15A
125V-2 POLE 3WIRE GROUNDING
C1 .1UF
C2 .1UF
W
BK
G
PI
CHASSIS GND
TO INNERLINER
E11
PARTITION
4 E7 & E8 DISCONNECTED & NOT USED, ON LN2 MODEL ONLY.
5 E5 & E6 DISCONNECTED & NOT USED, ON CO2 MODEL ONLY
2 THICK LINES INDICATES HEAT POWER CIRCUITRY.
1.
NOTE:
· THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE V CONTROLLER.
· SEE SHT 1 FOR TYPE III
6 USED ON CO2-LN2 DUAL MODEL ONLY.
7 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED & NOT USED, ON CO2-LN2 DUAL MODEL ONLY.
NOTES: UNLESS OTHERWISE SPECIFIED
ENGINEERING ACTIVITY
DESIGN
DRAFTED 3DEC79 RAP
CHECKED
APPROV
RELEASE
DO NOT SCALE DWG
DELTA DESIGN INC.
A SUBSIDIARY OF CONTROL INC.
SAN DIEGO, CA. 92138
TITLE: SCHEMATIC DIAGRAM 125V 2POLE 3WIRE GROUNDING
SIZE D
CODE IDENT
1635840
SCALE
SHEET 2 OF 2



6 USED ON CO_2, LN_2 DUAL MODEL ONLY

5 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED AND NOT USED ON CO_2 LN_2 DUAL MODEL ONLY

4 E7 & E8 DISCONNECTED AND NOT USED ON LN_2 MODEL ONLY

3 E5 & E6 DISCONNECTED AND NOT USED ON CO_2 MODEL ONLY

2. THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION-DO NOT REMOVE P2 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES

©NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE III CONTROLLER.
- SEE SHT 2 FOR TYPE V.

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PER ECN M871 AMMED 9-24-74		
	B	PER ECN M1499 BGM 6-15-78	7-7-78	
	C	PER ECN M1948 RAP 9MAY79 · REMOVED J1 SERVICE PLUG · ADDED NOTE 3 · SEE OBSOLETE DWG D-1635838 REVISION B FOR "WAS" CONDITION	10-4-79	
	D	PER ECN M2038 THAMES 6-4-80 AFFECTS SHEET 2	7/11/80	

HIGHEST REFERENCE DESIGNATIONS
A2 | TB3 | R1 | W2 | E8 | S1 | DS1 | C1 | HR2 | K1
B1 | J1 | P2 | E11

REFERENCE DESIGNATIONS NOT USED
E5 | E6

2850

DRAWN	A HUTTON	11/7/78
CHECKED	B.B.	
APPROV		

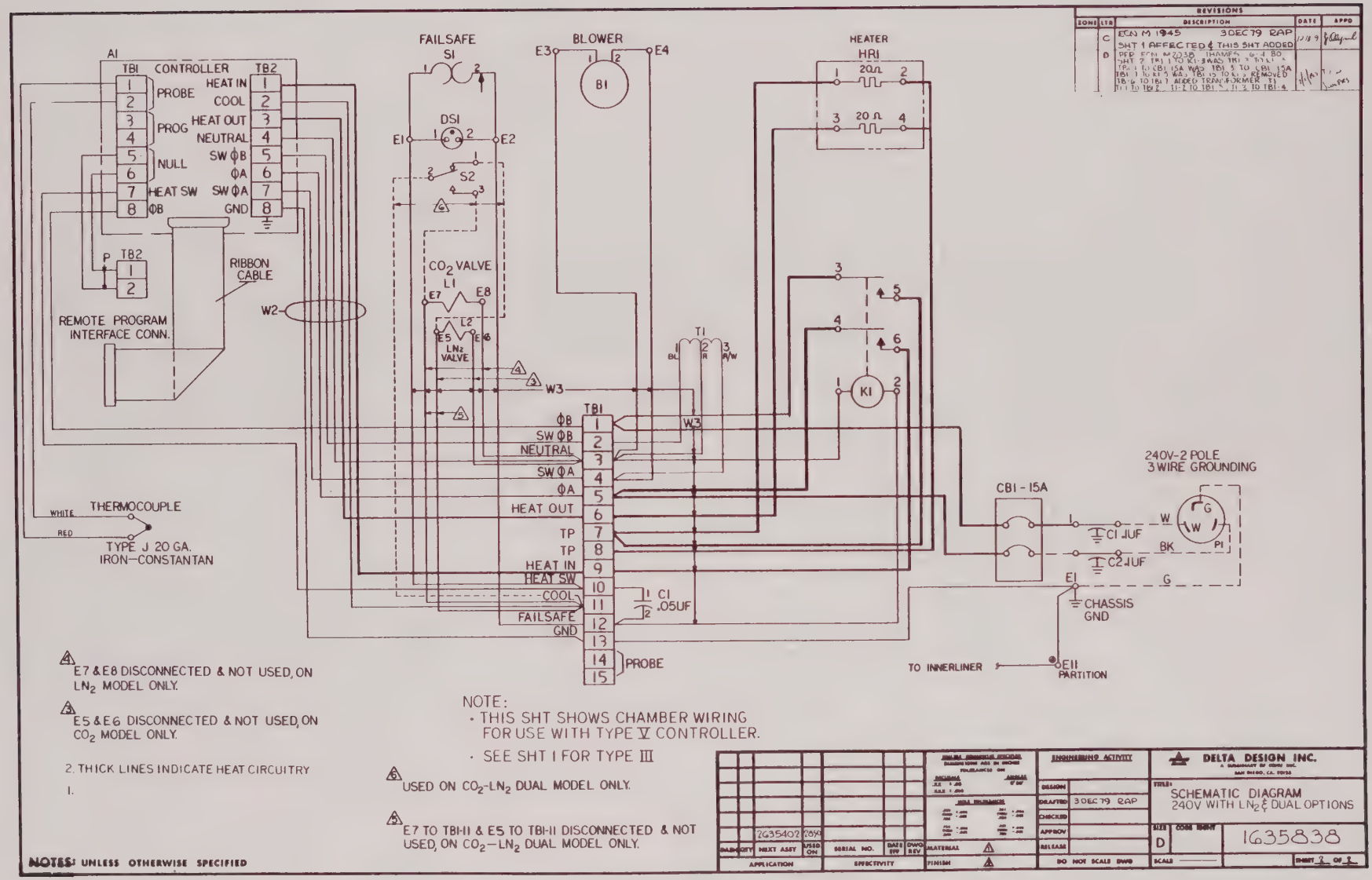
DELTA DESIGN INC
SAN DIEGO, CALIFORNIA

TITLE: SCHEMATIC DIAGRAM 240V W/ LN_2 AND DUAL OPTIONS

SIZE	CODE IDENT NO	DRAWING NO	REV LTR
D		1635838	D

SCALE | SHEET 1 OF 2

BLUE CARD 1



NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE V CONTROLLER.
- SEE SHT 1 FOR TYPE III

⚠1 E7 & E8 DISCONNECTED & NOT USED, ON LN_2 MODEL ONLY.

⚠3 E5 & E6 DISCONNECTED & NOT USED, ON CO_2 MODEL ONLY.

2. THICK LINES INDICATE HEAT CIRCUITRY

1.

⚠4 USED ON CO_2-LN_2 DUAL MODEL ONLY.

⚠5 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED & NOT USED, ON CO_2-LN_2 DUAL MODEL ONLY.

NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	C	ECN M 1945 3DEC79 RAP SHT 1 AFFECTED & THIS SHT ADDED	12/18/79	
	D	PER ECN M2038 THMFR G-1 80...		

ENGINEERING ACTIVITY	
DESIGN	
DRAFTED	3DEC79 RAP
CHECKED	
APPROV	
RELEASE	
DO NOT SCALE DWG	

DELTA DESIGN INC.

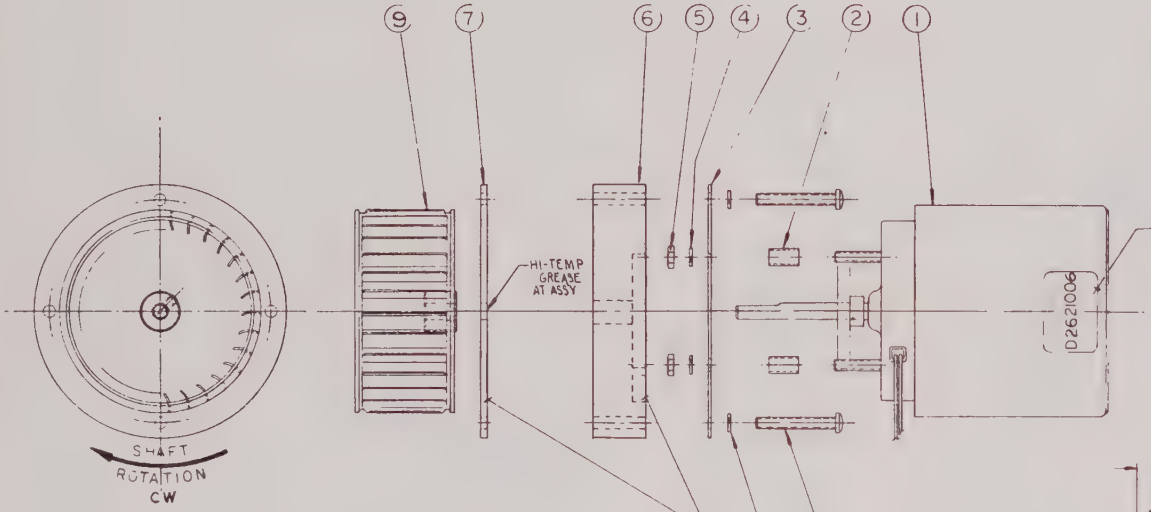
TITLE: SCHEMATIC DIAGRAM 240V WITH LN_2 & DUAL OPTIONS

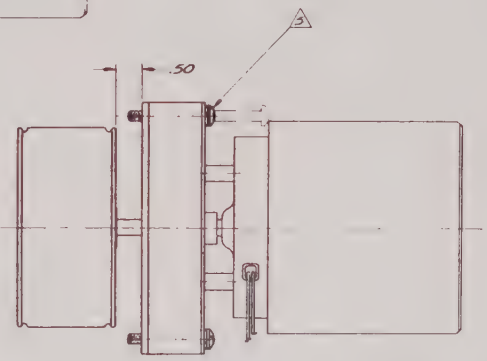
SIZE D — CODE IDENT — 1635838

SCALE — SHEET 2 OF 2

2G35402	7698					
ASSEMBLY	NEXT ASSY	USED ON	SERIAL NO.	DATE REV	DWG REV	MATERIAL
APPLICATION			EFFECTIVITY			FINISH

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PER ECN M1401 5-7-78 BGM REVISED NOTE 3	5-4-78	





1) MOTOR: 115 V. 50/60 Hz (NO THERMAL PROTECTION) SEALED BALL BEARING SHAFT ROTATION

2.) IMPELLER: REVCOR #0381-187 S (CCW ROTATION) ALTER PER B1632186

3.) RTV ITEM 7 TO ITEM 6: ATTACH ITEM 3 (MOTOR PLATE) TO ITEM 1 (MOTOR) USING HARDWARE, THEN RTV TO ITEM 6

4.) BLOWER MOTOR ASSY RATED AT 140 C.F.M. AIR MOVEMENT, NOM.

3 TAPE ITEMS 4 & 10 IN PLACE TO PREVENT BEING JARRED LOOSE BEFORE INSTALLING ON CHAMBER.

QTY REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON FRACTIONS ± 1/64, DECIMALS .XX ± .010, .XXX ± .005, ANGLES ± 1/2°

MATERIAL

FINISH

	BY	DATE
DESIGN	[illegible]	4/4/78
DRAFTED	[illegible]	4/4/78
CHECKED	[illegible]	4/4/78
APPROV		

DELTA DESIGN INC
9300 FLETCHER PKWY
LA MESA, CALIF. 92041
TEL A/C + 1 + 714 463 4141

TITLE: 50/60 Hz BLOWER MTR. ASSEMBLY CW SHAFT ROTATION

MODEL NO: STD PART

PART NO: 2621006

SIZE: D | JOB/CUST NO | DRAWING NO: 2621006 | REV LTR: A

SCALE: FULL | SHEET 1 OF 1

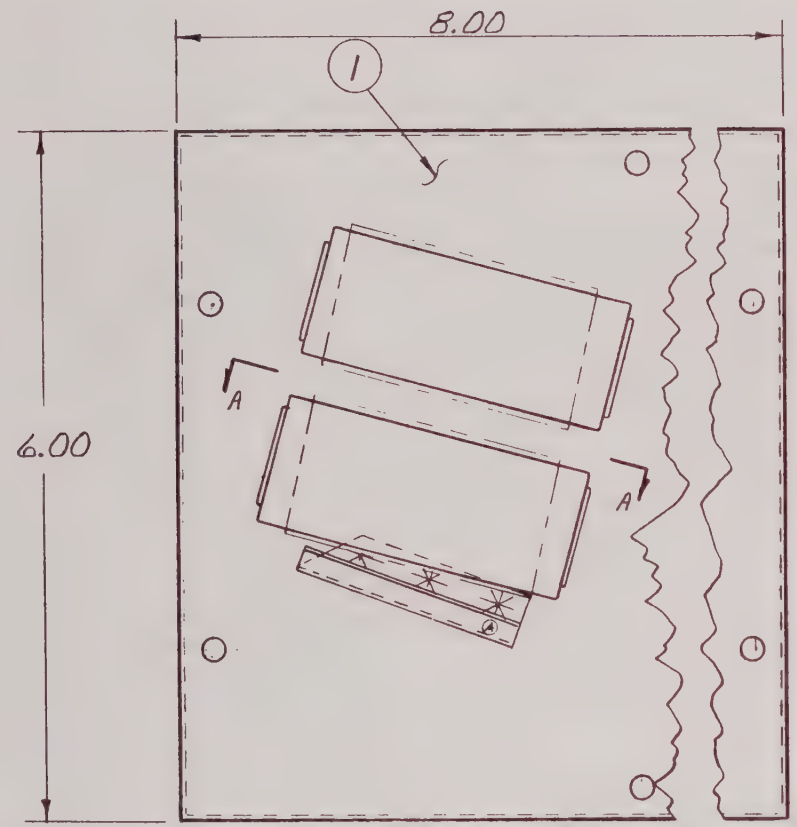
MULTI-RESALE STD 2570, M/C

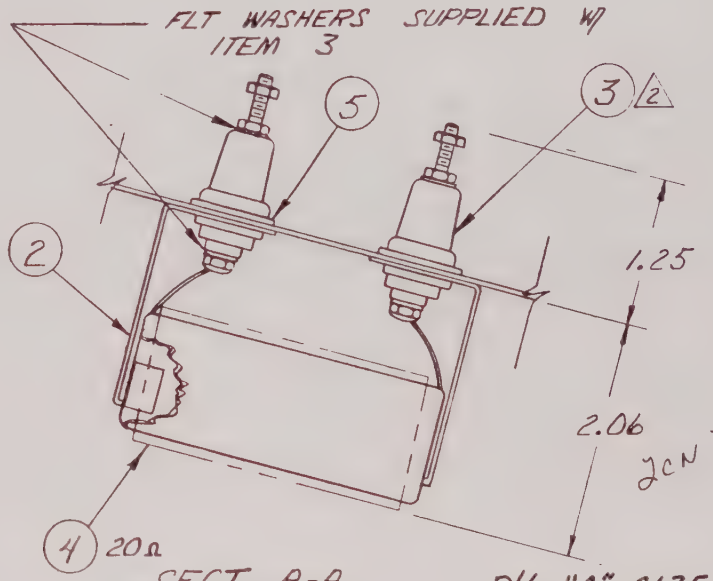
NEXT ASSY | USED ON | APPLICATION | SERIAL NOS | DATE EFF | DWG REV LTR | EFFECTIVITY

NOTES

BLUE CARD

REVISIONS				
ZONE	LTR.	DESCRIPTION	DATE	APPROVED
	A	PER ECN M683 RBrooks 5-28-71 ADDED BRACKET, PICTURE CHANGE ONLY	5-29-71	M. Ludd 5-29-71





SECT. A-A

P/L "A" SIZE

ECN X436 8-30-17

QTY. REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

2 DISCARD PAPER WASHERS SUPPLIED WITH ITEM NO. 3. REPLACE WITH ITEM NO. 5.

1. ALL DIM. REF ONLY

NOTES:

UNLESS OTHERWISE SPECIFIED THE FOLLOWING APPLIES
BREAK ALL SHARP EDGES .005 MAX., SURFACE ROUGHNESS 125 RMS
THDS INT. CL 2B, EXT CL 2A

NEXT ASSY	USED ON	SERIAL NOS	DATE EFF	DWG REV LTR.
2635402	2850			—
APPLICATION		EFFECTIVITY		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 ANGLES ± ½°
DECIMALS .XX ± .010
.XXX ± .005

MATERIAL:

FINISH

	BY	DATE
DESIGN		
DRAFTED	KNAPP	5-27-72
CHECKED	Harris	7-6-72
APPROV.	L. ELLIS	7-6-72

DO NOT SCALE DRAWING

PART NO. 2635876

DELTA DESIGN INC.
8000 FLETCHER PKWY
LA MESA, CALIF 92041
TEL: A/C (714) 465-4141

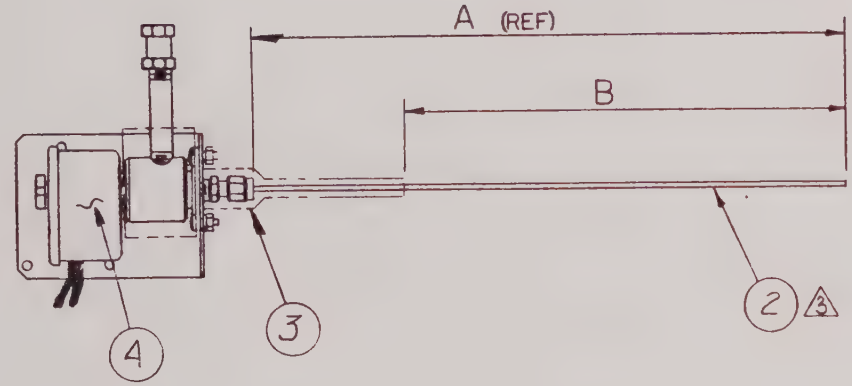
TITLE: HEATER ASSY.

SIZE	CODE IDENT. NO.	DRAWING NO.	REV LTR
B		2622520	

SCALE FULL SHEET 1 OF 1

BLUE CARD

19



REVISIONS				
ZONE	LTR	DESRIPTION	DATE	APPD
	A	PER ECN M694 DTD 6-4-74 F.J.O. 4.75 DIM WAS 3.75		11.3all 6-6-74
	B	PER ECN M747 REVISED 6-24-74 -001 "B" DIM WAS 4.75	7-8-74	Bell
	C	PER ECN M1012 OLEJNIK 6-11-75 -002 "A" DIM WAS 10.44 "B" DIM WAS 3.00	6/12/75	R Engr.
	D	PER ECN M1017 OLEJNIK 7-16-75	7/1[illegible]	[illegible]
	E	PER ECN 1365 BGM 3-28-78 VALVE ASSY ITEM 4 UPDATED, SEE ECN — TABULATION BLOCK 4.50 WAS 3.00	4-13-78	[illegible]
	F	PER ECN M1521 BGM 7-20-78 INJECTOR ASSY ITEM 2 UPDATED, A+B DIMS CHANGED IN TABULATION BLOCK, SEE ECN	7-31-78	[illegible]

DASH NO	A	B	USED ON
-001	8.62	3.75	2300
-002	10.12	5.50	2850
-003	7.00	6.00	7650
-004	9.18	6.00	5900
-005	26.62	20.00	2850
-006			
-007			
-008			
-009			
-010			

3 INSERT ITEM 2, TUBE, ALL THE WAY TO VALVE'S INNER ORIFICE BEFORE TIGHTENING DOWN TUBE FITTINGS

4 FINISH (IF APPLICABLE)

5 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	DWG REV
		MULTIPLE		STD USAGE		
APPLICATION				EFFECTIVITY		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES: DIM
DECIMALS .XX ± .03 .XXX ± .010
ANGLES 0° 30'
HOLE TOLERANCES
.013 THRU .125 +.004 −.001
.251 THRU .500 +.004 −.001
.126 THRU .250 +.006 −.001
.501 THRU .750 +.006 −.001

MATERIAL 4
FINISH 5

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	KNAPP 3-29-73
CHECKED	MILLER 4/6/73
APPROV	Herrin 4-6-73
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONTROL INC.
5725 KEARNY VILLA RD SAN DIEGO, CA. 92123 - TEL (714) 292-5000

TITLE: CO_2 ASSY (900 PSI) SINGLE STEM

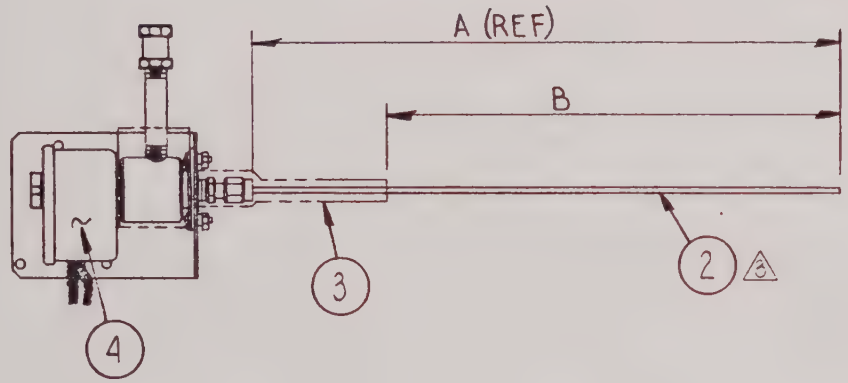
SIZE	CODE IDENT	
B		2618016

SCALE 1/2 X

SHEET 1 OF 1

INITIAL RELEASE ECN A1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	B	PER ECN M1365 4-14-78 F.J.D.	4-14-78	F.J.D.
	C	PER ECN M1521 BGM 7-21-78 INJECTOR ASSY. ITEM 2, UPDATED, A & B DIMS. CHANGED IN TABULATION BLOCK, SEE ECN	7-31-78	J.C.



DASH NO	A	B	USED ON
-001	8.62	3.75	2300
-002	10.12	5.50	2850
-003	7.00	6.00	7650
-004	9.18	6.00	5900
-005	26.62	20.00	2850
-006			
-007			
-008			
-009			
-010			

3. INSERT ITEM 2, TUBE, ALL THE WAY TO VALVE 5 INNER ORIFICE BEFORE TIGHTENING TUBE FITTINGS

4. FINISH (IF APPLICABLE)

5. MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTI-STD USAGE	

APPLICATION

SERIAL NO.	DATE EFF	DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
ANGLES: 0° 30'
HOLE TOLERANCES
.012 THRU .125 +.006 −.001
.126 THRU .250 +.003 −.001
.251 THRU .500 +.006 −.001
.501 THRU .750 +.008 −.001

MATERIAL 1
FINISH 2

ENGINEERING ACTIVITY: ECN 1365

DESIGN	
DRAFTED	BGM 3-26-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

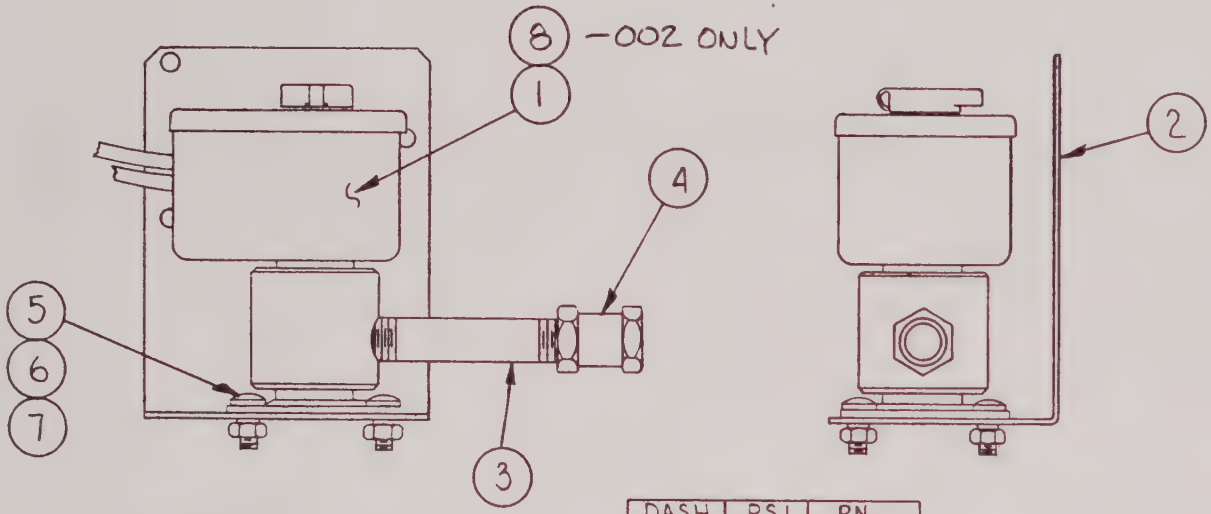
DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: CO_2 ASSY. (300 PSI) SINGLE STEM

SIZE	CODE IDENT	
B		2618015

SCALE 1/2 SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



DASH	PSI	PN
-001	900	1800117
-002	300	1800105

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTI-USAGE	

APPLICATION

SERIAL NO.	DATE EFF	DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± .03 .XXX ± .010
ANGLES 0° 30'
HOLE TOLERANCES

MATERIAL ⚠

FINISH ⚠

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	BGM 3-24-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

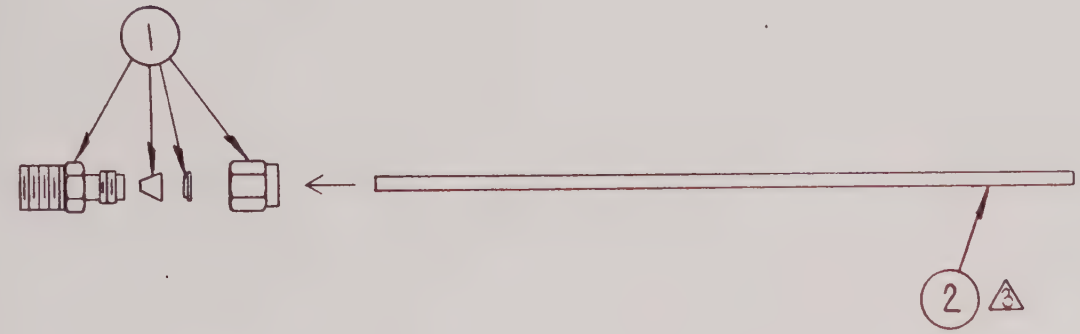
DELTA DESIGN INC.
A SUBSIDIARY OF COMU INC.
SAN DIEGO, CA. 92123

TITLE: CO_2 VALVE & BRACKET ASSY

SIZE	CODE IDENT	
B		1647407

SCALE 1:1 SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



4) FOR INSTRUCTIONS ON HOW TO ASSEMBLE SEE NEXT ASSEMBLY

3 REMOVE ALL BURRS & SHARP EDGES, CLEAR I.D. OF ANY OBSTRUCTIONS

4 FINISH (IF APPLICABLE)

4 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		2618016	-002
		2618015	-001

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
ANGLES: 0° 30'
HOLE TOLERANCES
.013 THRU .123: +.000 -.001 / .251 THRU .500: +.006 -.001
.126 THRU .250: +.000 -.001 / .501 THRU .750: +.006 -.001

MATERIAL 1
FINISH 4

ENGINEERING ACTIVITY
ECN M1521

DESIGN	
DRAFTED	BGM 7-14-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

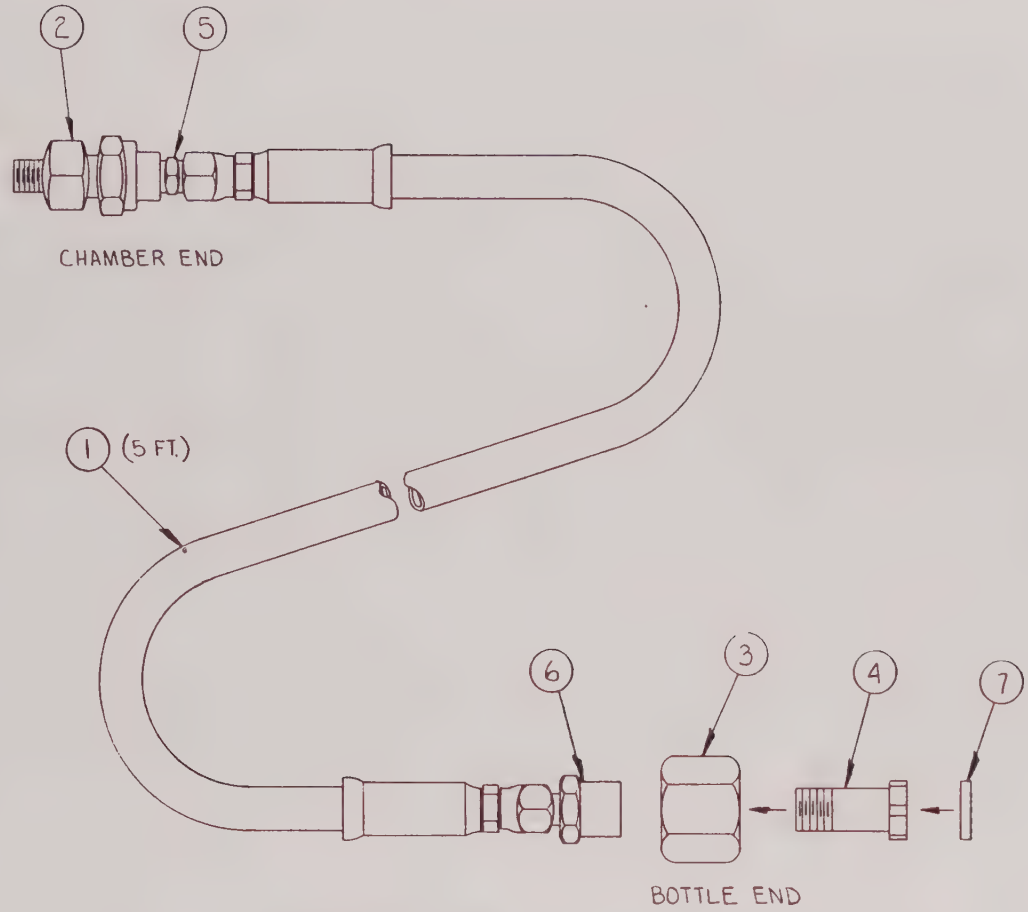
DELTA DESIGN INC.
A SUBSIDIARY OF COMU INC.
SAN DIEGO, CA. 92123

TITLE: INJECTOR ASSY, CO_2 SINGLE STEM

SIZE B | CODE IDENT | 1647840

SCALE NONE | SHEET __ OF __

BUT CAN



DASH	QTY	NEXT ASSY	USED ON
001	1	1640111	8000
001	1		7650
001	1	2636342	6400
001	1	2635601	5700
001	1	2636283	3900
001	1	2635402	2850
001	1	2605110	2300

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0° 30'

HOLE TOLERANCES

.013 THRU .123	+.004 −.001	231 THRU .499	+.006 −.001
.126 THRU .368	+.003 −.001	501 THRU .750	+.006 −.001

MATERIAL ⚠1

FINISH ⚠2

ENGINEERING ACTIVITY
ECN M1622

DESIGN	B. NOLSEN 10-2-73
DRAFTED	
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: HOSE SHIP KIT

SIZE C | CODE IDENT | 2618020

SCALE 1/1 | SHEET 1 OF 1

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

BLUE CARD

INDEX OF ASSEMBLIES - 2850 CHAMBER

	TITLE	SIZE & NO.	SHEET
1).	Chamber Ass'y	D2635402	1
2).	Innerliner Ass'y	D2635382	1
3).	Innerliner Spotweld Ass'y	D2635381	1
4).	Sheet, Top Ass'y	C2635380	1
5).	Sheet, Bottom Ass'y	C2635377	1
6).	Sheet, R. Baffle Ass'y	B2635371	2
7).	Can Ass'y	B2632196	2
8).	Partition Ass'y	D1643276	3
9).	Panel Ass'y, Rear	D2635394	3
10).	Panel Ass'y, R. Side	D2635396	3
11).	Panel Ass'y, Bottom	D2635397	3
12).	Bezel Ass'y	D2635401	3
13).	Cable Ass'y W1	A2635264	4
14).	Cable Ass'y W2	A2635265	4
15).	Weld Ass'y, Tube Guide	B1640309	4
16).	Motor Ass'y, Blower	D2621006	4
17).	Thermoswitch Ass'y	B2602503	5
18).	Heater Ass'y	B2622520	5
19).	Element Ass'y, 20ohm	B2635875	5
20).	CO_2 Ass'y	B2618016	6
21).	Injector Ass'y, CO_2 Single Stem	B1647840	6
22).	CO_2 Valve & Bracket Ass'y	B1647407	6
23).	Plate Ass'y, Power	C2635057	7
24).	Capacitor Ass'y, Mod	A2635048	7
25).	Cable Ass'y	A2635833	8

	TITLE	SIZE & NO.	SHEET
26).	Ship Kit Ass'y	C2618020	10
27).	CO_2 Ass'y, Single Stem	B2618015	11
28).	Injector Ass'y CO_2 Single Stem	B1647840	11
29).	CO_2 Valve & Bracket Ass'y	B1647407	11

P/L 2635402 REV ____ SHT 1 OF 11

DESCRIPTION TOP ASS'Y 2850 CHAMBER

NEXT ASSY END ITEM BY ____ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP
R	1521	7-2-79	BSCH	
S	1629	10-4-79	BSCH	
T	1729	12-5-79	BSCH	

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S.O. NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV.	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
00	X					D	2635402	K	CHAMBER ASS'Y. (2850)		2635402
00											
00	REF					D	1635840		SCHEMATIC		
00	REF					D	1635838	A	SCHEMATIC 240 VAC		
00	REF					C	1635836		125 TO 240 VAC CONVERSION		
00	REF		⚠			C	1640222	A	LN2 INSTAL. ASS'Y. - VALCOR VALVE (IN FIELD)		1640222-006
00	REF					D	1643453	B	CO2 TO LN2 CHMB. CONVERSION ASS'Y.		
00	REF					D	2639166	C	CO2 - LN2 DUAL CONVERSION		
00	REF					D	1640082	B	OPTION CO2 TO LN2 WITH REDUNDANT VALVE		1640082-001
00	REF					D	1640082	B	OPTION CO2 - LN2 DUAL WITH REDUNDANT VALVE		1640082-002
00	REF					P/L	1648289		TOP ASSY, TYPE III CONTROLLER		
00											
01	1					D	2635382	B	INNERLINER ASS'Y.		2635382
00											
00											
01	1					D	2635381	A	INNERLINER SPOTWELD ASS'Y.		2635381
00											
00											
01	1					C	2635380	A	SHEET, TOP ASS'Y.		2635380
00											
01	1					C	2635380	A	SHEET, TOP		1635380
02	2					A	1635379		SHEET, ANGLE		1635379
03	1					A	1635378		SHEET, DEFLECTOR		1635378
04	1					B	1635366		SHEET, ANGLE		1635366
05											
06											
02	1					C	2635377		SHEET, BOTTOM ASS'Y.		2635377
00											
01	1					C	2635377		SHEET, BOTTOM		1635377
02	2					A	1635379		SHEET, ANGLE		1635379
03	1					B	1635366		SHEET, ANGLE		1635366
04											
05											

JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY	DUE	REC	MANUFACTURE ACT STD	EST HRS	ACT COM	ACT CONS	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠ THESE DWGS. ARE FOR OPTIONAL EQUIP. ONLY, AND ARE NOT PART OF BASIC CHAMBER.

P/L 2635402

PL. 2635402 REV ____ SHT 2 OF 11
DESCRIPTION TOP ASS'Y (2850)
NEXT ASSY END ITEM BY ~~ARCH~~ACK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. ____ S.O. NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
06											
03	1					D	1635376	C	SHEET, RIGHT		1635376
04	1					D	1635375	B	SHEET, LEFT		1635375
05											
06	1					B	1635373	B	SHEET, TOP DEFLECTOR		1635373
07	1					B	1635372	A	SHEET, BOTTOM DEFLECTOR		1635372
08	1					B	1630007	C	RETAINER		1630007
09	1					B	1634771	C	TUBE, CO_2 VENT		1634771-005
10	1					B	1634780	E	TUBE, LN_2 GUIDE		1634780-010
11	1					B	1634774		TUBE, PROBE GUIDE		1634774-004
12											
13											
14											
15											
02	1					B	2635371		SHEET, RIGHT BAFFLE ASS'Y.		2635371
00											
01	1					B	1635370		SHEET, RIGHT BAFFLE		1635370
02	1					A	1635369		SHEET, PROBE GUARD		1635369
03											
03	1					B	1635368		SHEET, LEFT BAFFLE		1635368
04	1					C	1635367	B	SCROLL	1635367	M/F 2100701
05	1					B	2632196	D	CAN ASS'Y.		2632196-004
00											
01	1					B	1632350	C	CAN		1632350-004
02											
03											
04	2					A	1631838	A	TAB		1631838
05	1								GROMMET		1500026
06											
06	16								*4 × 1/4 PHP-SMS		6904142-400
07	6								*6 × 3/8 PHP-SMS		6906382-400
08	1					B	1600015		SCROLL RING		1600015
09	1					C	1635374		SHEET, BACK		1635374

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY	DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 2635402

P/L 2635402 REV ____ SHT 3 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~ARMA~~ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S.O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STD	EST ACT HRS	CON	COMP	PLATE/PAINT IN	CUT	AREA
10	A/R								RTV (RED)	DOW-CORNING	2400003														
11																									
12																									
13																									
14																									
02	1					D	1643276	A	PARTITION ASS'Y.		1643276-001														
00																									
00	REF					C	1635989	D	SILKSCREEN		1635989														
01	1					D	1643276	A	PARTITION .06 AL. ALY.	3003-H14 FINEBARK	1643276														
02	9								*6-32 RIVNUT, FLT. HD.		1700036														
03	6								*8-32 RIVNUT, FLT. HD.		1700006														
04																									
03	1					D	2635394	C	PANEL ASS'Y., REAR		2635394														
00																									
01	1					D	2635394	C	PANEL, BACK		1635394														
02	8								*6-32 RIVNUT, CSK. HD.	A6-106	1700037														
03																									
04	1					D	1635395	B	PANEL, LEFT SIDE		1635395														
05	1					D	2635396		PANEL ASS'Y., RIGHT SIDE		2635396														
00																									
01	1					D	2635396		PANEL .062 AL. ALY.	3003-H14 FINEBARK	1635396-001														
02	7								*6-32 RIVNUT, CSK. HD.	BF GOODRICH A6-106	1700037														
03	1								*8-32 RIVNUT, CSK. HD.	BF GOODRICH A8-106	1700005														
04																									
06	1					D	2635397		PANEL ASS'Y., BOTTOM		2635397														
00																									
01	1					D	2635397		PANEL, BOTTOM		1635397-001														
02	4								*6-32 RIVNUT, CSK. HD.	BF GOODRICH A6-106	1700037														
03	4								*10-32 RIVNUT, FLT. HD.	BF GOODRICH A10-80	1700035														
04																									
07	1					D	1635398	B	PANEL, TOP		1635398														
08	1					D	1600526	H	PANEL, FRONT		1500526														
09	1					D	2635401	B	BEZEL ASS'Y.		2635401														

NOTES:

P/L 2635402

PL 2635402 REV ____ SHT 4 OF 11

DESCRIPTION TOP ASS'Y 2850 CHAMBER

NEXT ASSY END ITEM BY ~~Arena~~ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. ____ S.O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO
00											
01	2					B	1634689	B	ANGLE, BEZEL		1634689-003
02	2					B	1634689	B	ANGLE, BEZEL		1634689-004
03											
10	1					A	2635264	A	CABLE ASS'Y. (W1)		2635264-001
00											
01	A/R								WIRE, 18 AWG	COHU STK.	7700618-999
02	6								SOLDERLESS TERMINAL	(SPADE)	1500055
03											
04											
11	1					A	2635265	B	CABLE ASS'Y. (W2)		2635265-004
00											
01	A/R								WIRE 14 AWG	COHU STK.	7700614-999
02	A/R								WIRE 18 AWG	COHU STK.	7700618-999
03	8								SOLDERLESS TERMINAL	(SPADE)	1500055
04	2								SOLDERLESS TERMINAL	(SPADE)	150054
05											
06											
12	1					A	1602967	D	OUTER PLATE, VENT		1600533
13	1					A	1602968	D	GASKET, VENT		2400063
14	1					B	1640309		WELD ASS'Y.-TUBE GUIDE		1640309-001
00											
01	1					B	1640309		PLATE (1.25 × 1.25 × .032)	302-304 SST	1640309-101
02	1					B	1640309		TUBE (.50 O.D. × .028 WALL × 1.00 LG.) WELDED & DRAWN		1640309-102
03											
15	4								GASKET, STRIP		2400024
16	1					B	1640100		FLEXIDRIVE	1640100-101	M/F 1500451
17	1					D	2621006	A	MOTOR ASS'Y, BLOWER		2621006
00											
01	1					C	1632174		50/60 Hz MOTOR		2100652
02	4					B	1632176		INSULATION SPACER		4100174
03	1					B	1632177		MOTOR PLATE		1632177
04	8								#10 LOCKWASHER		6610011

JOB QTY	AUL	QTY REC	FAB CD	PURCHASING PO NO	QTY DUE	REC'D	MANUFACTURE ACT EST STD	HRS	COMP	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 2635402

PL 2635402 REV ____ SHT 5 OF 11

DESCRIPTION TOP ASS'Y (E850)

NEXT ASSY END ITEM BY ____ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S.O. NO ____

QTY ____ PROM DATE ____ ACT ____

RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE REC	MANUFACTURE ACT STD HRS	EST ACT COM	COM	PLATE/PAINT IN	OUT	AREA
05	4								* 10-32 HEX NUT		6710321												
06	1					C	1635327	A	SPACER		4100173												
07	1					B	1632180	A	SCROLL GASKET		0200116												
08	A/R								RTV-106		2400003												
09	1					B	1632186		STRIP WHEEL		2100505												
10	4								* 10-32 x 1½ PHP-MS		6810326-424												
11																							
12																							
13																							
14																							
18	2					B	1600091	B	SHIM, KEEPER ⚠		1600091												
19	2					C	1635605	B	LATCH KEEPER		4100051												
20	4								FOOT, RUBBER		1500416												
21	A/R								INSULATION, FIBERGLASS		2400025												
22	A/R								INSULATION, PRESSTITE		2400026												
23	1					B	2602503	C	THERMOSWITCH ASS'Y.	(S1)	2300004												
00																							
01	1								THERMOSTAT	VULCAN 1DIC2-4	2300004												
02	1					A	1600007	C	BRACKET		1600007												
03																							
24	1								LAMP, NEON	(DS1)	1400082												
25	1								RELAY	(K1)	1400218												
26	1								CAPACITOR .05 uf 400V	(C1)	0700520-400												
27	1					B	2622520	A	HEATER ASSY.	(HR1)	2622520												
00																							
01	1					C	1635870	C	SHEET, HEATER		1635870												
02	4					B	1635868		STANDOFF, HEATER		1635868												
03	4								INSULATOR, CERAMIC		1500327												
04	2					B	2635875		ELEMENT 20Ω		2635875-004												
00																							
01	1					B	2635875		ELEMENT, HTR. 20Ω	LYON-RURAL ELECT.	2200005												
02	2								STUD ⚠	BIRNBACH #458	1500327												
03	2								NUT ⚠	BIRNBACH #458	1500327												

NOTES: ⚠ USE ONLY AS REQ'D. TO OPTIMIZE SEAL.

⚠ ITEMS 2 & 3 ARE SEPARATED FROM STK. ITEM 1500327 AND SUPPLIED TO VENDOR.

P/L 2635402

PL 2635402 REV ____ SHT 6 OF 11

DESCRIPTION TOP ASS'Y. (2850)

NEXT ASSY END ITEM BY ~~Arana~~ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. ____ S.O. NO. ____

QTY ____ PROM DATE ____ ACT ____

RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.	JOB QTY	AUL	QTY REQ	FAB CD	PURCHASING PO NO	QTY DUE	REC'D	MANUFACTURE ACT EST ACT STD HRS	COM	CM	PLATE/PAINT IN	OUT	AREA
04																								
05																								
05	4					A	1635867		GASKET, INSULATOR		1635867													
06																								
07																								
08																								
28	1					B	2618016	F	CO_2 ASS'Y. (L1)	900 P.S.I. ⚠4	2618016-005													
00																								
~~01~~	~~1~~					~~B~~	~~2618005~~		~~CO_2 VALVE WELDMENT~~		~~2618005-001~~													
02	1					B	1647840		INJECTOR ASS'Y, CO_2 SINGLE STEM		1647840-110													
00																								
~~01~~	~~1~~					~~C~~	~~1618012~~	E	~~MOD., PIPE PLUG~~	~~1618012-002~~	~~MF 3600078~~													
01	1								FITTINGS, INJECTOR		3600197													
02	1					B	1647841		TUBE, CO_2 INJECTOR	TYPE 300 SS, ⅛ O.D., .029 I.D.	1647841-115													
~~03~~	~~1~~					~~B~~	~~1618006~~	B	~~TIP, CO_2 INJECTOR~~	~~1618006-002~~	~~4100040~~													
03	½								INSULATION	PRESSTITE TYPE 5	2400026													
04	1					B	1647407		CO_2 VALVE & BRACKET ASS'Y.		1647407-001													
00																								
01	1								SOLENOID VALVE	(900 P.S.I.)	1800117													
02	1					B	1645008		BRACKET, CO_2		1645008-101													
03	1								NIPPLE, BRASS-⅛ NPT ×	2.00	3601038													
04	1								COUPLING ⅛ NPT		3600102													
05	4								* 8-32 × ⅜ PHP-MS		6808323-804													
06	4								* 8 SPLIT LOCKWASHER		6608010													
07	4								* 8-32 HEX NUT		6708320													
08																								
09																								
10																								
05																								
06																								
29	1								TERMINAL BLOCK	(TB1)	1400572													
~~30~~	~~1~~					~~C~~	~~2635055~~	A	~~PANEL-ASS'Y-SIGNAL~~	~~(A3)~~	~~2635055~~													
00																								

NOTES: ⚠4 CO_2 PSI OPTIONAL PER CUSTOMER PREFERENCE

P/L 2635402

PL 2635402 REV ____ SHT 7 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~Arena~~ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ FROM DATE ____ ACT ____
RUN ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO	JOB QTY	AUX	QTY REC	FAB CD	PURCHASING PO NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT SCM	CCM	PLATE/PAINT IN	OUT	AREA
00																								
01	1					B	1635054	C	PANEL, SIGNAL		1635054													
02	1					B	2600409		PLUG MOD, AMPHENOL	(P1)	2600409													
00																								
01	1								PLUG, 4 PIN AUDIO	AMPHENOL 91 MC4M	2000051													
02	1								CHAIN, 4"		1500226													
03	2								*6 EYELET		3600101													
04	1								* 2-56 x 5/32 PHP-MS															
05	A/R								WIRE, 20 GA BUS															
06	1								*2 FLAT WASHER		6602C00000													
07																								
03	1								SOCKET	(J1)	2000044													
04	1								TERMINAL BLOCK	(TB1)	1400509													
05	1					A	1600012	C	NULL TERMINAL COVER		1600012													
06	4								*6 x 1/2 PHP-SMS		6906120-400													
07	2								*6-32 x 3/4 PHP-MS		6806323-404													
08																								
09																								
10																								
~~01~~	~~1~~					~~C~~	~~2635058~~	~~K~~	~~PANEL ASS'Y., POWER~~	~~(A2) 125V~~	~~2635058~~													
00																								
00																								
01	1					C	2635057	H	PLATE ASS'Y., POWER		2635057-003													
00																								
00	REF					C	1635604	A	SILKSCREEN MASTER		1635604-003													
01	1					C	2635057	H	PANEL .08 AL. ALY. SHT.	6061-T6	1635057-003													
02	4								*6-32 RIVNUT, CSK. HD.	BF GOODRICH AG-106	1700037													
03																								
02	1								FUSEHOLDER	(XF1)	1400050													
03	2					A	2635048	A	CAPACITOR, MOD.	(C1, C2)	2635048													
00																								
01	1								CAPACITOR		0800007													
02	1								SWAGE NUT		1700029													

NOTES:

P/L 2635402

P.L. 2635402 REV ____ SHT 8 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY Irma CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO ____ S.O. NO. ____

QTY ____ PROM DATE ____ ACT ____

RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
03											
04	1								STRAIN RELIEF		1500077
05	~~2~~								~~PLUG, BUTCH ½"~~		~~9600081~~
06	1								PLUG, POWER		2000135
07	8.5	FT.							POWER CORD		1500394
08	1								*6-32 × ½ PHP-MS		6806321-224
09	2								*6-32 × ⅜ PHP-MS		6806323-824
10	4								*6 SPLIT LOCKWASHER		6606012
11	3								SOLDERLESS TERMINAL	(RING)	1500071
12	1								SOLDERLESS TERMINAL	(RECEPT.)	1500066
13	5"								WIRE, 14 AWG	COHU STK.	7700 314-999
14	2								*6-32 HEX NUT		6706322
15	1								SOLDERLESS TERMINAL	(RING)	1500056
16											
17											
18											
19											
20											
~~32~~	~~1~~								~~FUSE, 15A~~	~~(A2-F1)~~	~~1400037~~
33	1								PROBE	(R1)	2300031
34	1					A	2635833	B	CABLE ASS'Y.	(W3)	2635833-002
00											
00	REF					D	1635841	A	SCHEMATIC DIAGRAM	125V	
01	A/R								WIRE, 14 AWG (TEFLON)		1500330
02	A/R								WIRE, 18 AWG (TEFLON)		1500387
03											
04	4								SOLDERLESS TERMINAL	(SPADE)	1500054
05	2								SOLDERLESS TERMINAL	(SPADE)	1500055
06	3								SOLDERLESS TERMINAL	(RING)	1500062
07											
08											
35	1					B	1600004	D	COVER, BLOWER MTR.		1600004
36	6								WIRE NUT, SMALL	(E1-E4, E7, E8)	1500188

PURCHASING P.O. NO	QTY DUE	REC'D	MANUFACTURE ACT STD HRS	EST ACT COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 2635402

PL 2635402 REV ____ SHT 3 OF 11
DESCRIPTION TOP ASSY (E850)
NEXT ASSY END ITEM BY ____ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S.O. NO ____
QTY ____ PROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	ACT COM	PLATE/PAINT IN	OUT	AREA
37	1								GROMMET		1500026													
38	1								PLUG (3/8 DIA HOLE)		3600082													
39	1								PLUG (1/2 DIA HOLE)		3600081													
40	1								PLUG (1 1/4 DIA HOLE)		1700142													
41	1								ADAPTER BUSHING		4100003													
42	1								NUT		1500735													
43	2					A	1635610		SPACER		1635610													
44	2					B	1648658		SUPPORT BLOCK - INNER LINER		1648658-101													
45	2								SOLDERLESS TERMINAL (RING)		1500062													
46																								
47																								
48	A/R								WIRE, 14 AWG (TEFLON)		1500380													
49	A/R								WIRE, 14 AWG	COHU STK.	7700614-999													
50	A/R								WIRE, 20 AWG	COHU STK.	7700620-999													
51	2								GROMMET, 1/2"		1500032													
52	6								CABLE TIE		1500014													
53	6								PUSH MOUNT		1500013													
54	1								OUTLET, CONVENIENCE (J1)		1500083													
55	4								*4 x 1/2 PHP-SMS		6904120-400													
56																								
57																								
58																								
59	2								*6-32 x 3/8 PHP-MS		6806323-204													
60	17								*6-32 x 1/2 PHP-MS		6806321-204													
61	40								*6 x 1/2 PHP-SMS		6906126-400													
62	10								*6 x 1/2 FHP-SMS		6906120-100													
63	11								*8 x 1/2 THP-SMS		6908120-600													
64	8								*10-32 x 1/2 PHP-MS		6810321-204													
65	1								*8-32 x 1/2 THP-MS		6808321-206													
66	13								*6 LOCKWASHER		6606010													
67	6								*10 SPLIT LOCKWASHER		6610010													
68																								
69	4								*6 HEX NUT		6706320													

NOTES: ⚠ INDICATED ON SHT. 5 OF DWG.

P/L 2635402

PL 2635402 REV — SHT 10 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~ARNOCK~~'D — APPD —

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO — S.O NO —
QTY — PROM DATE — ACT —
RUN # — MACH —

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.	JOB QTY	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	COMP	PLATE/PAINT IN	OUT	AREA
70	1								* 10-32 × 3/4 PHP-MS		6810323-404												
71	4								* 10 FLATWASHER		6610000												
72	2								* 10-32 HEX NUT		6710320												
73	1					C	2618020		SHIP KIT ⚠		2618020-001												
00																							
01	1								HOSE		3600123												
02	1								STRAINER		1400110												
03	1								NUT		3600120												
04	1								SLEEVE		3600121												
05	1								CONNECTOR		3600004												
06	1								CONNECTOR		3600119												
07	1								WASHER		3600122												
74	1								STRAIN RELIEF		1500077												
75	1								PLUG, POWER P1 120V		2000135												
76	8-6								POWER CORD		1500394												
77	2								CAPACITOR C1, C2		2635048												
78	1					B	2600409		PLUG P2		2600409												
79	1								SOCKET J2		2000044												
80	1								TERMINAL BLOCK TB2		1400509												
81	1					A	1600012		NULL TERMINAL COVER		1600012												
82	1								CIRCUIT BREAKER CB1 120V	AM2-A3-A20-3	1400008												
82	1							⚠	CIRCUIT BREAKER CB1 240V	AM2-A3-A15-2	1400002												
84	1							⚠	PLUG, POWER P1 240V	HUBBLE #4570-C	2000224												
85	1					C	1647767		CASE, CIRCUIT BREAKER		1647767-101												
86	1					B	1643476		IDENTIFICATION PLATE		1643476-101												
87	5								SOLDERLESS TERMINAL (RING)		1500071												
88	2								SCREW #4 x 1/4 PHPSM		6904140-400												
89	4								SCREW #6 x 1/4 PHPSM		6906140-400												
90	2								SCREW #6-32 x 3/4 PHPMS		6806323-404												
91																							
92	1								SCREW #10-32 PHPMS		6810321-219												
93	3								LOCK WASHER (EXT) #10		6610031-000												
94	2								NUT #10		6710321-000												

NOTES: ⚠ TO BE SHIPPED WITH CHAMBER.

P/L 2635402

P.L. 2635402 REV ____ SHT 11 OF 11

DESCRIPTION TOP ASSY (2850)

NEXT ASSY END ITEM BY BGM CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. ____ S.O. NO ____
QTY ____ PROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY B QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO
95	1					B	2618015	C	CO_2 ASSY SINGLE STEM	(300 PSI) ⚠1	2618015-005
00											
~~01~~	~~1~~					~~B~~	~~2618005~~		~~CO_2 VALVE WELDMT ASSY~~	~~—~~	~~2618005-002~~
02	1					B	1647840		INJECTOR ASSY CO_2 SINGLE STEM		1647840-009
00											
01	1								FITTINGS, INJECTOR		3600197
02	1					3	1647842		TUBE, CO_2 INJECTOR	TYPE 300 SS 1/8 O.D. .035 I.D.	1647842-115
03											
03	A/R								INSULATION	PRESSTITE TYPE S	2400026
04	1					B	1647407		CO_2 VALVE + BRACKET ASSY		1647407-002
00											
01											
02	1					B	1645008		BRACKET, CO_2		1645008-101
03	1								NIPPLE, BRASS - 3/8 NPT x 2.00		3601038
04	1								COUPLING, 1/8 NPT		3600102
05	4								#8-32 x 3/8 PHP-MS		6808323-804
06	4								#8 LOCKWASHER I.D.		6608010-000
07	4								#8 HEX NUT		6708320-000
08	1								SOLENOID VALVE (300 PSI)		1800105

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STO	EST ACT RS	COMP	COMP	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠1 CO_2 PSI OPTIONAL PER CUSTOMER PREFERENCE

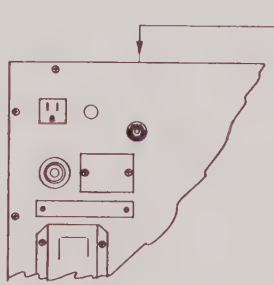
P/L 2635402

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	A	PER FCN M2027 F.J.O 5-9-80 CHG'D VIEW OF ITEM 1 REMOVED TERM BRD COVER	5-9-80	

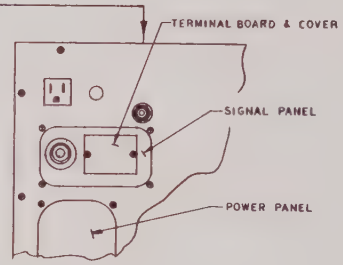
—INSTRUCTIONS FOR CHAMBER RETROFIT— TYPE V CONTROLLER

1. REMOVE CHAMBER RIGHT SIDE PANEL TO ALLOW ACCESS TO CONTROLLER & PROBE GUIDE TUBE. ON MODELS 2850, 5900 & 7650 TOP PANEL MUST BE REMOVED AS WELL.
2. REMOVE EXISTING CONTROLLER & ITS PROBE. DO NOT DESTROY BLACK PRESS-TITE.
3. NOTE CHAMBER REAR PANEL CONFIGURATION & DECIDE WHICH MEANS OF MOUNTING THE REMOTE INTERFACE CABLE ASSY. PLUG BEST SUITS YOUR CHAMBER & REQUIREMENTS
4. MAKE THE REAR PANEL MODIFICATIONS
5. MOUNT THE REMOTE INTERFACE CABLE ASSY PLUG TO THE REAR PANEL— SEE DRAWING D1650223 & PARTS LIST FOR CABLE & HARDWARE CALLOUTS
6. INSERT THERMOCOUPLE ASSY IN PROBE GUIDE TUBE & SECURE IN PLACE USING BLACK PRESS-TITE — SEE DRAWING D1650223 — CAUTION — DO NOT SHORTEN THERMOCOUPLE ASSY WIRE FOR ANY REASON
7. INSTALL TYPE V CONTROLLER & WIRE PER WIRING DIAGRAM D1635840 OR D1635838 SHEET 2 OF 2. IF NECESSARY, COIL EXCESS THERMOCOUPLE WIRE & POSITION IT BETWEEN CONTROLLER & CHAMBER TO ACT AS A SERVICE LOOP IF NEEDED
8. REPLACE TOP PANEL IF YOU HAVE A MODEL 2850, 5900 OR 7650
9. BEFORE REPLACING SIDE PANEL SEE CONTROLLER MANUAL FOR SET UP & CALIBRATION PROCEDURES
10. CALIBRATE CONTROLLER
11. REPLACE SIDE PANEL

IF YOUR MODEL 2850 CHAMBER REAR PANEL LOOKS LIKE THIS, MODIFY BY:

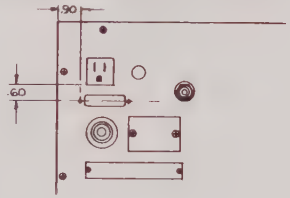


1/2 SCALE

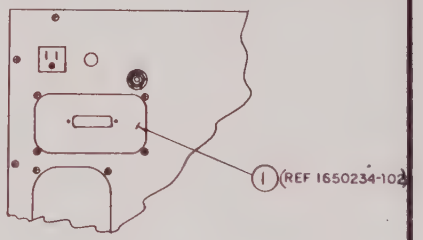


1/2 SCALE

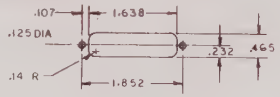
1. ADD CUTOUT AT DIMENSION SHOWN



1. REMOVE OLD SIGNAL PANEL & REPLACE WITH NEW ITEM 1.



REMOTE INTERFACE CABLE ASSY PLUG CUTOUT DIMENSIONS



⚠ FINISH (IF APPLICABLE)

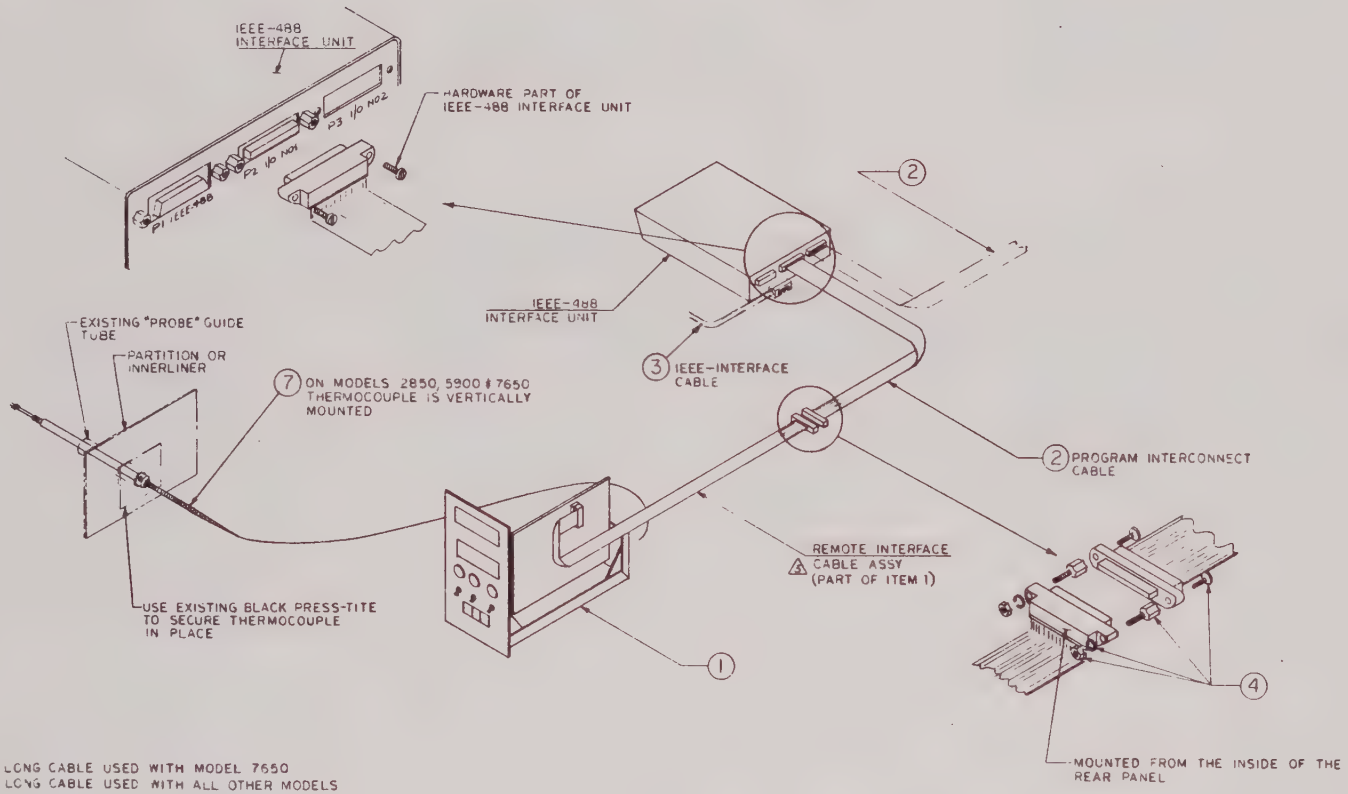
⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

								ENGINEERING ACTIVITY M1945	DELTA DESIGN INC.
								DESIGN	TITLE: CHAMBER, TYPE V CONTROLLER RETROFIT 2850
								DRAFTED OLEJNIK 12-17-79	
								CHECKED	
								APPROV	
1	2635402	2850						RELEASE	SIZE D — 1650239
BASIC QTY	NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	SHOP REV	MATERIAL ⚠		DO NOT SCALE DWG	SCALE — SHEET 1 OF 1
APPLICATION			EFFECTIVITY			FINISH ⚠			

BLUE CARD

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



⚠3 36" LONG CABLE USED WITH MODEL 7650
28" LONG CABLE USED WITH ALL OTHER MODELS

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

	-	2635[illegible]	M145				
	-	2636342	5400				
	-	2635611	5900				
	-	2636283	7900				
		2635403	5600				
	-	2635[illegible]	2300				
DASH NO'S		NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	DWGS REV	MATERIAL ⚠
APPLICATION				EFFECTIVITY			FINISH ⚠

ENGINEERING ACTIVITY
M145

DESIGN	
DRAFTED	OLENIK 11-8-84
CHECKED	
APP'ROV	
RELEASE	
DO NOT SCALE DWG	

DELTA DESIGN INC.
A SUBSIDIARY OF CONIC INC.
SAN DIEGO, CA. 92123

TITLE:
INTERCONNECT ASSY.
TYPE V CONTROLLER WITH
IEEE-488

SIZE	CODE IDENT	
D		1650223
SCALE		SHEET __ OF 1

PL 1650230 REV ____ SHT 1 OF 1

DESCRIPTION THERMOCOUPLE ASSY.

NEXT ASSY MULTI USAGE BY E.J.G. CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

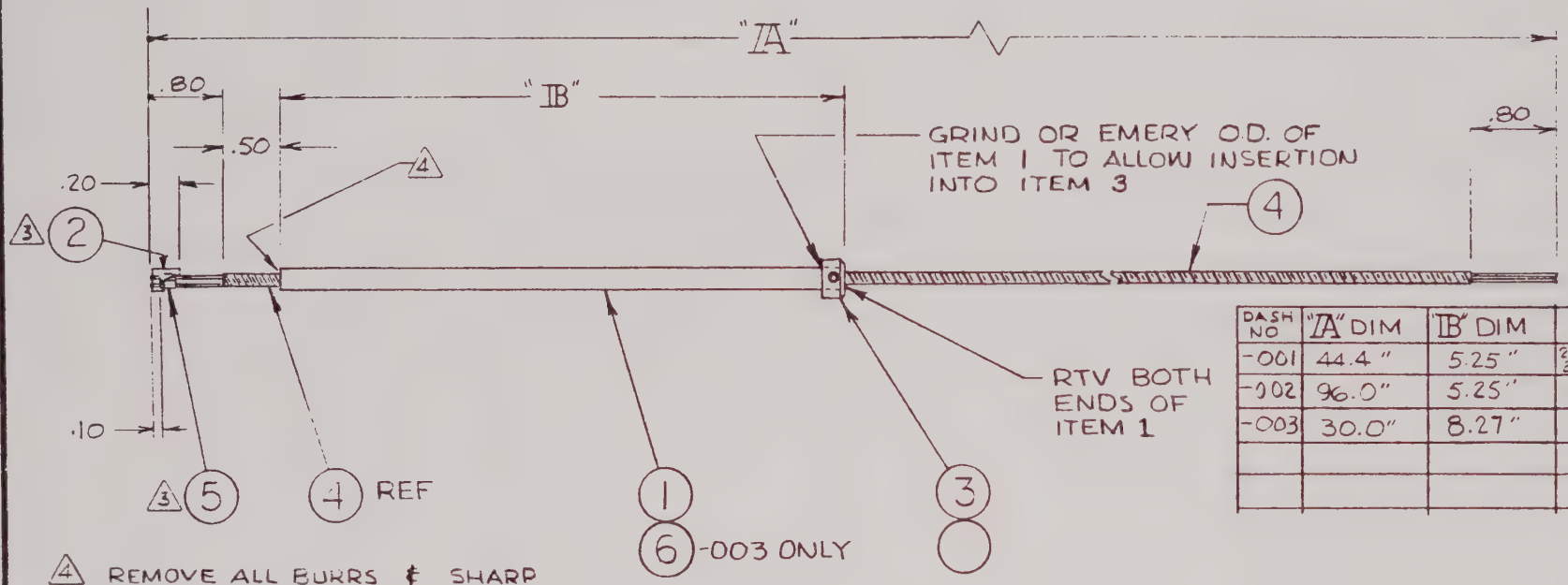
ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.
00	X					B	1650230		THERMOCOUPLE ASSY.		1650230-001
00		X				B	1650230		THERMOCOUPLE ASSY		1650230-002
00			X			B	1650230		THERMOCOUPLE ASSY		1650230-003
00											
00											
00											
00											
01	1	1				B	1650230		TUBE, ALUMINUM		1650230-101
									3/16 O.D. X .022 WALL X 5'/4 LONG		
02	1	1	1			B	1650230		TUBE, ALUMINUM		1650230-102
									3/16 O.D. X .022 WALL X .20 LONG		
03	1	1	1						COLLAR, SET SCREW	BERG # C55	1700292
04	4'								WIRE, THERMOCOUPLE	IRON CONSTANTAN	1501375
		8'							" "	" "	1501375
			30"						" "	" "	1501375
05	1	1	1						QUIKTIP	# 128543	1700327
06			1				B1650230		TUBE, ALUMINUM		1650230-103
									3/16 O.D. X .022 WALL X 8.27" LONG		

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING PO NO	QTY	DUE REC	MANUFACTURE ACT EST ACT STD HRS COM COM	PLATE/ PAINT IN	OUT	AREA

NOTES:

P/L 1650230

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	A	PER ECN M2052		



DASH NO	"A" DIM	"B" DIM	USED ON
-001	44.4"	5.25"	2300 THRU 7650, 2850A
-002	96.0"	5.25"	8000
-003	30.0"	8.27"	2300A

4 REMOVE ALL BURRS & SHARP EDGES FROM I.D. OF ITEM 1 (BOTH ENDS)

3 INSURE ITEM 5 IS SOLIDLY CRIMPED OVER ITEM 4 — THEN ITEM 2 IS CRIMPED OVER ITEM 5

4 FINISH (IF APPLICABLE)

4 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
003	1	MULTI-USAGE	
002	1	1650223	8000
001	1	1650223	

APPLICATION | SERIAL NO. | DATE EFF | DWG REV | EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± .03 .XXX ± .010 ANGLES 0°30' MOU TOLERANCES

MATERIAL 3 | FINISH 4

ENGINEERING ACTIVITY M1952

DESIGN	
DRAFTED	OLESNIK 12/6/73
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONTROL DATA CORP.
SAN DIEGO, CA. 92123

TITLE: THERMOCOUPLE ASSY.

SIZE B | CODE IDENT | 1650230

SCALE | SHEET 1 OF 1

PL 1650223 REV ____ SHT 1 OF 1

DESCRIPTION INTERCONNECT ASSY TYPE V CONTROLLER MULTI IEEE-488

NEXT ASSY MULTI-USAGE BY E.J.O. CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD.
SAN DIEGO, CALIF.

JOB NO ____ S.O NO. ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O NO	QTY	DUE	REC'D	MANUFACTURE STD HRS	ACT EST	ACT COM	COM	PLATE/PAINT IN	OUT	AREA
00	X					D	1650223		INTERCONNECT ASSY- TYPE V CONTROLLER WITH IEEE-488		1650223-001															
00																										
00																										
00																										
00																										
00																										
00																										
01	REF					D	1650160		TYPE V CONTROLLER		1650160-001															
02	1								PROGRAM INTERCONNECT	CABLE																
03	1								IEEE-488 INTERFACE	CABLE																
04	1								JACK SOCKET ASSY.	ANSLEY #609-003	1700324															
05																										
06																										
07	1					B	1650230		THERMOCOUPLE ASSY	MULTI-USAGE	1650230-001															

NOTES:

1650223
P/L

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